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## **Summary of Changes**

This section describes the changes made in this version of ThinkServer PSREF and in previous version. This edition might also include minor corrections and editorial changes which are not identified.

#### May 6, 2015 - Version 473

Additions in this update

- ► Add 9.5mm optical support on TD350.
- Add Red Hat Enterprise Linux 7 support on RD350/RD450/RD550/RD650/TD350
- ► Add 32 x 2.5" bay support on TD350
- ► Add AnyBay and 2.5" PCIe SSD support on RD550/RD650

#### Changes in this update

Update ASHRAE information on TD350

#### May 6, 2015 - Version 472

Changes in this update

► Remove ThinkServer RD650/RD550/RD450/RD350 development models

#### March 4, 2015 - Version 469

Additions in this update

▶ New ThinkServer TS140 models announced March 2015.

#### February 11, 2015 - Version 468

Additions in this update

▶ New ThinkServer RD350/RD450/RD550/RD650 models announced February 2015.

#### **January 28, 2015 - Version 467**

Additions in this update

- ▶ New ThinkServer RD550 models announced December 2014.
- Add 2nd CPU PN on RD550

#### **January 7, 2015 - Version 466**

Additions in this update

- ▶ New ThinkServer RD650 models announced October or December 2014.
- ▶ New ThinkServer RD650 Options sheet.
- New ThinkServer RD550 Options sheet.
- New ThinkServer RD650 Overview sheet.

#### Changes in this update

Update specifications:

Add M.2 SSD support on RD650 and RD550.

Add chassis intrusion switch on RD650 and RD550.

Update AnyRAID support information on RD650 and RD550

Update expansion slots specification on RD650 and RD550.

Update rear disk bay spec on RD650 and RD550.

Add internal storage supporting list for RD650 and RD550

Add 2nd CPU PN on RD650

Remove some RD650 and RD550 SVT models.

#### **December 17, 2014 - Version 465**

#### Additions in this update

New models

New ThinkServer RD450 models ann December 9, 2014: 70DA000XUX,70DA000YUX,70DA0010UX,70DA0011UX,70DA0012UX,70DA0013UX,70DA0014UX, 70DC001CUX,70DC001DUX,70DC001EUX,70DC001FUX,70DC001GUX,70DC001HUX,70DC001JUX, 70DC001KUX,70DE000HUX,70DE000JUX,70DE000KUX,70DV0008UX,70DV0009UX,70DV000AUX

New models

New ThinkServer RD450 models ann December 9, 2014: 70D6001YUX, 70D60020UX, 70D60021UX, 70D60022UX, 70D60023UX, 70D60024UX, 70D60025UX, 70D60026UX, 70D8001TUX, 70D8001UUX, 70D8001VUX, 70D8001WUX, 70D8001XUX, 70D80020UX, 70D80021UX

#### December 3, 2014 - Version 464

#### Additions in this update

New product

ThinkServer RD450 ann December 2, 2014.

New product

ThinkServer RD350 ann December 2, 2014.
On RD450, RD350 pages, add 2nd CPU option PN on single processor models

#### November 12, 2014 - Version 463

#### Changes in this update

Updates RD650 and RD550 network interface specifications.

#### September 30, 2014 - Version 460

Changes in this update

- ▶ Updates RD650/RD550/TD350 environmental specifications, add 45 ° C continuous operation configuration limitation.
- ► Remove RD650 model 70CV0000US.

#### **September 10, 2014 - Version 459**

#### Additions in this update

New product(s)

New ThinkServer TD350 announced September 2014 (70DG-1, 70DG-2, TD350REL-1) New ThinkServer RD650 announced September 2014 (70D0-1, 70D4-1, 70DR-1, RD650REL-1) New ThinkServer RD550 announced September 2014 (70CV-1, 70CV-2, 70CX-1, RD550REL-1)

#### August 19, 2014 - Version 458

#### Additions in this update

▶ New model(s)

New ThinkServer RD650 models announced August 2014 New ThinkServer RD550 models announced August 2014

## April 15, 2014 - Version 452

#### Changes in this update

► Selected RD340/RD440/RD540/RD640 models are withdrawn and labeled as red

### February 25, 2014 - Version 450

#### Additions in this update

New section

ThinkServer Servers, contains all ThinkServer servers pages

▶ New section

ThinkServer Storage, contains ThinkServer storage pages

New section

Summary of changes, contains changes list for the three most recent versions

New product

ThinkServer TD340 ann January 21, 2014. Includes the following pages:

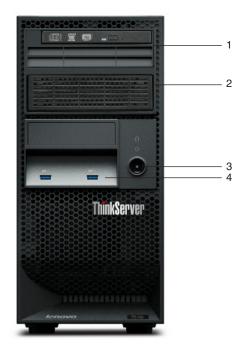
ThinkServer TD340 Overview

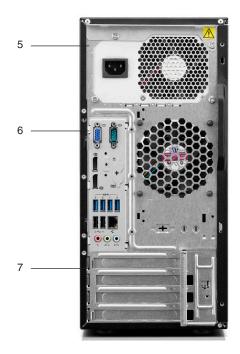
ThinkServer TD340 TopSeller Models - 70B7 - I

ThinkServer TD340 TopSeller Models - 70B7 - II

ThinkServer TD340 TopSeller Models - 70B7 - III

#### ThinkServer TS140 - Overview





#### Front view

- 1. Optional slim optical + 3.5" drive bay in standard 5.25" bay
- 2. Optional 3.5" hard drive bay
- 3. Power Button
- 4. Front I/O: 2 USB 3.0 (blue)

#### Rear view

- Power Supply: 280 watts 80 PLUS Bronze/450 watts 80 PLUS Platinum
- 6. Rear I/O: 2 USB 2.0 4 USB 3.0(blue) 1 serial (9-pin) 1 RJ-45 (GbE)

  - 1 line-in
  - line-out

  - 1 microphone-in
    2 DisplayPort (for Intel HD Graphics)
    1 VGA (for Intel HD Graphics)
- 7. 1 PCle 3.0 x16

  - 1 PCle 2.0 x1 1 PCle 2.0 x16 (x4 elec) 1 PCl

#### Internal

- One LGA1150 socket, supports one processor from Intel Xeon E3-1200 v3, Core-i3 4000, and Pentium families
- 4 DIMM sockets, supports up to 32GB ECC UDIMM memory
- Up to four 3.5" hard drive bays, two 3.5" hard drive bays standard

#### Mechanical

- Raven black color; metal case
- Rack-mountable to 4U
- 6.89"W x 16.97"D x 14.76"H
- 175mm W x 431mm D x 375mm H
- 28.66 lb (13kg) max configuration
- 25-liter

Type- model	Processor	Memory type	Memory DIMMs	Graphics	Pre- conf RAID	Storage	Optical	Add-on ports	Discrete ethernet	Power Supply	Rack kit	Windows Server 2012 Preloaded	Base on-site warranty (-year)
70A4001LUX	Xeon E3-1225 v3 (4C/3.2GHz/8MB/1600MHz)	1600MHz ECC	4GBx1	Intel HD P4600	No	Open (4x3.5" Bay)	Slim DVD	No	No	280W	No	No	1
70A4001MUX	Xeon E3-1225 v3 (4C/3.2GHz/8MB/1600MHz)	1600MHz ECC	4GBx1	Intel HD P4600	No	1x500GB 3.5" SATA (4x3.5" Bay)	Slim DVD	No	No	280W	No	No	1
70A4001NUX	Xeon E3-1275 v3 (4C/3.5GHz/8MB/1600MHz)	1600MHz ECC	4GBx1	Intel HD P4600	No	Open (4x3.5" Bay)	Slim DVD	No	No	280W	No	No	1
70A4001PUX	Xeon E3-1245 v3 (4C/3.4GHz/8MB/1600MHz)	1600MHz ECC	4GBx1	Intel HD P4600	No	Open (4x3.5" Bay)	Slim DVD	No	No	280W	No	No	1
70A4001QUS	Xeon E3-1225 v3 (4C/3.2GHz/8MB/1600MHz)	1600MHz ECC	4GBx1	Intel HD P4600	RAID 1	2x500GB 3.5" SATA (4x3.5" Bay)	Slim DVD	No	No	280W	No	Foundation	1
70A4001RUS	Xeon E3-1225 v3 (4C/3.2GHz/8MB/1600MHz)	1600MHz ECC	4GBx1	Intel HD P4600	RAID 1	2x500GB 3.5" SATA (4x3.5" Bay)	Slim DVD	No	No	280W	No	Essentials	1
70A4001SUX	Xeon E3-1225 v3 (4C/3.2GHz/8MB/1600MHz)	1600MHz ECC	4GBx1	Intel HD P4600	No	1x1TB 3.5" SATA (4x3.5" Bay)	Slim DVD	No	No	280W	No	No	1

<sup>\*</sup> Model in italics shows that this is a Global Model. "UX" model does not include preloaded operating system.

#### kServer TS140 Platform Specifications sheet

•	For detailed ThinkServer TS140 platform specifications, please see T
Systems management	EasyStartup, EasyUpdate on all models; Intel Active Management Technology 9 on models with Xeon processor (KVM function needs Intel Xeon E3-12x5 v3 processors)
Chipset	Intel C226 Chipset
Processor	One <b>LGA1150</b> socket, integrated 2-channel DDR3 memory controller, optional integrated processor graphics on selected processors
Memory type	1600MHz UDIMM, DDR3, ECC, 2-channel capable; 2GB, 4GB, and 8GB ECC UDIMMs are available
Memory DIMM sockets	Four 240-pin DIMM sockets, up to 32GB ECC UDIMM (Actual memory operating speed depends on processor memory controller speed, installed memory speed, and quantity of memory DIMMs)
Graphics	<ul> <li>Integrated Intel HD Graphics on Xeon E3-12x5 v3, Core i3, and Pentium processors, uses main memory, works along with discrete graphics to support multi-display, enables three display connectors (2 DisplayPort, 1 VGA) on rear ports (detailed information please see <i>Rear ports</i> section)</li> <li>Also supports the following optional discrete graphics adapters:         <ul> <li>NVIDIA Quadro NVS 300, PCIe x16 adapter, 512MB</li> <li>NVIDIA Quadro 600, PCIe x16 adapter, 1GB</li> </ul> </li> </ul>
Onboard SATA	Onboard ThinkServer RAID 100 SATA controller in chipset,
controller	SATA 6.0Gb/s, RAID 0, 1, 5, 10 support
Drive bays	Up to four 3.5" hard drive bays (see right)
Storage	3.5" SATA 6.0Gb/s hard drives, 7200 rpm
Optical	Supports DVD-ROM or DVD±RW, 1.6" high or slim, SATA interface
Front ports	Two USB 3.0 (blue)
Rear ports	One VGA and two DisplayPort for models with Intel HD Graphics, two USB 2.0, four USB 3.0 (blue), one serial (9-pin), one ethernet (RJ-45), three analog audio ports (line-in, line-out, mic-in)
Add-on ports (optional)	Supports the following:  Single Parallel Port PCI Adapter (1xParallel) Single Serial Port PCI Adapter (1xSerial) Dual Serial Ports PCI Adapter (2xSerial PCI) Dual Serial Ports PCIe Adapter(2xSerial PCIe)
Onboard Ethernet	One onboard gigabit ethernet, Intel I217
Discrete Ethernet (optional)	Supports the following:  Intel Gigabit CT Desktop Adapter (1xGbE, RJ-45)  Intel Ethernet Server Adapter I350-T2 (2xGbE, RJ-45)  Intel Ethernet Server Adapter I350-T4 (4xGbE, RJ-45)
Keyboard/Mouse	None (use USB port)
Power supply	Supports one of the follwing, depending on models:  One fixed 280 watts, autosensing, 85%, 80 PLUS Bronze qualified  One fixed 450 watts, autosensing, 92%, 80 PLUS Platinum qualified
Form factor/ Rack-mountable	Tower, rack-mountable to 4U via optional ThinkServer Tower to Rack Shelf Conversion Kit (Option PN: 0C19515)
Mechanical	25-liter, raven black color; metal case     (WxDxH) 6.89"x 16.97"x 14.76"/175mm x 431mm x 375mm     28.66 lb (13kg) max configuration
Serviceability	Toolless side cover removal     Toolless disk and optical drive removal (standard bays)     Toolless adapter retention     Illuminated front icons
Base warranty	1 or 3-year parts and labor limited warranty <sup>1</sup>
Environmental certifications	GREENGUARD certified     Energy Star Server 1.1 qualified/     RoHS-compliant     More environmental information and requirements, please see
	ThinkServer TS140 Platform Specifications sheet

# **Drive bays** 3 Front

Left

Standard 5.25", 1.6" high optical or optional slim optical + 4th 3.5" drive bay
 Optional 3rd 3.5" drive bay or optional 4th 2.5" drive bay
 Optional 3rd 2.5" drive bay
 Standard 3.5"/2.5" primary drive bay
 Standard 3.5"/2.5" 2nd drive bay

4x3.5" bays models: Bay 1, 2, 4, 5 are included in models 3x3.5" bays models: Bay 2, 4, 5 are included in models 2x3.5" bays models: Bay 4, 5 are included in models

#### **Expansion Slots**

Slot 1: half-length, full-height, PCle 3.0 x16 (near CPU) Slot 2: half-length, full-height, PCle 2.0 x1 Slot 3: half-length, full-height, PCle 2.0 x16 (x4 elec) Slot 4: half-length, full-height, PCl 2.3

#### Security

Security chip: ST33ZP24AR28PVSP for TPM function, TCG 1.2-compliant

Padlock loop

(in rear for opt padlock; padlock prohibits side cover removal)

Security slot (in rear for optional Kensington Microsaver cable, prohibits side cover removal)
Power-on password

Boot sequence control

Boot without keyboard, mouse, diskette

Serial port I/O control

USB port disablement (front or all)

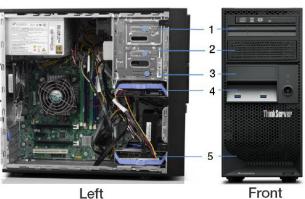
Type- model	Processor	Memory type	Memory DIMMs	Graphics	Pre- conf RAID	Storage	Optical	Add-on ports	Discrete ethernet	Power Supply	Rack kit	Windows Server 2012 Preloaded	Base on-site warranty (-year)
70A4006EUX	Xeon E3-1246 v3 4C/3.5GHz/8MB/1600MHz/	1600MHz ECC	8GBx4	Intel HD P4600	1	2x2TB 3.5" SATA	DVD±RW	No	No	280W	No	No	3
	Xeon E3-1246 v3 4C/3.5GHz/8MB/1600MHz/	1600MHz ECC	8GBx2	Intel HD P4600	1	2x1TB 3.5" SATA	DVD±RW	No	No	280W	No	No	3
	Xeon E3-1226 v3 4C/3.3GHz/8MB/1600MHz/	1600MHz ECC	8GBx1	Intel HD P4600	1	2x500GB 3.5" SATA	DVD±RW	No	No	280W	No	No	3

<sup>\*</sup> Model in italics shows that this is a Global Model. "UX" model does not include preloaded operating system.

#### nkServer TS140 Platform Specifications sheet

Systems management	EasyStartup, EasyUpdate on all models; Intel Active Management Technology 9 on models with Xeon processor (KVM function needs Intel Xeon E3-12x5 v3 processors)
Chipset	Intel C226 Chipset
Processor	One LGA1150 socket, integrated 2-channel DDR3 memory controller, optional integrated processor graphics on selected processors
Memory type	1600MHz UDIMM, DDR3, ECC, 2-channel capable; 2GB, 4GB, and 8GB ECC UDIMMs are available
Memory DIMM sockets	Four 240-pin DIMM sockets, up to 32GB ECC UDIMM (Actual memory operating speed depends on processor memory controller speed, installed memory speed, and quantity of memory DIMMs)
Graphics	<ul> <li>Integrated Intel HD Graphics on Xeon E3-12x5 v3, Core i3, and Pentium processors, uses main memory, works along with discrete graphics to support multi-display, enables three display connectors (2 DisplayPort, 1 VGA) on rear ports (detailed information please see <i>Rear ports</i> section)</li> <li>Also supports the following optional discrete graphics adapters:         <ul> <li>NVIDIA Quadro NVS 300, PCle x16 adapter, 512MB</li> <li>NVIDIA Quadro 600, PCle x16 adapter, 1GB</li> </ul> </li> </ul>
Onboard SATA controller	Onboard ThinkServer RAID 100 SATA controller in chipset, SATA 6.0Gb/s, RAID 0, 1, 5, 10 support
Drive bays	Up to four 3.5" hard drive bays (see right)
Storage	3.5" SATA 6.0Gb/s hard drives, 7200 rpm
Optical	Supports DVD-ROM or DVD±RW, 1.6" high or slim, SATA interface
Front ports	Two USB 3.0 (blue)
Rear ports	One VGA and two DisplayPort for models with Intel HD Graphics, two USB 2.0, four USB 3.0 (blue), one serial (9-pin), one ethernet (RJ-45) three analog audio ports (line-in, line-out, mic-in)
Add-on ports (optional)  Onboard Ethernet	Supports the following:  Single Parallel Port PCI Adapter (1xParallel) Single Serial Port PCI Adapter (1xSerial) Dual Serial Ports PCI Adapter (2xSerial PCI) Dual Serial Ports PCIe Adapter (2xSerial PCIe)
Onboard Ethernet	One onboard gigabit ethernet, Intel I217
Discrete Ethernet (optional)	Supports the following:  Intel Gigabit CT Desktop Adapter (1xGbE, RJ-45)  Intel Ethernet Server Adapter I350-T2 (2xGbE, RJ-45)  Intel Ethernet Server Adapter I350-T4 (4xGbE, RJ-45)
Keyboard/Mouse	None (use USB port)
Power supply	Supports one of the follwing, depending on models:  One fixed 280 watts, autosensing, 85%, 80 PLUS Bronze qualified  One fixed 450 watts, autosensing, 92%, 80 PLUS Platinum qualified
Form factor/ Rack-mountable	Tower, rack-mountable to 4U via optional ThinkServer Tower to Rack Shelf Conversion Kit (Option PN: 0C19515)
Mechanical	<ul> <li>25-liter, raven black color; metal case</li> <li>(WxDxH) 6.89"x 16.97"x 14.76"/175mm x 431mm x 375mm</li> <li>28.66 lb (13kg) max configuration</li> </ul>
Serviceability	<ul> <li>Toolless side cover removal</li> <li>Toolless disk and optical drive removal (standard bays)</li> <li>Toolless adapter retention</li> <li>Illuminated front icons</li> </ul>
Base warranty	1 or 3-year parts and labor limited warranty <sup>1</sup>
Environmental certifications	GREENGUARD certified Energy Star Server 1.1 qualified/ RoHS-compliant More environmental information and requirements, please see ThinkServer TS140 Platform Specifications sheet

#### **Drive bays**



Left

- Standard 5.25", 1.6" high optical or optional slim optical + 4th 3.5" drive bay
   Optional 3rd 3.5" drive bay or optional 4th 2.5" drive bay
   Optional 3rd 2.5" drive bay
   Standard 3.5"/2.5" primary drive bay
   Standard 3.5"/2.5" 2nd drive bay

Av3.5" bays models: Bay 1, 2, 4, 5 are included in models 3x3.5" bays models: Bay 2, 4, 5 are included in models 2x3.5" bays models: Bay 4, 5 are included in models

#### **Expansion Slots**

Slot 1: half-length, full-height, PCle 3.0 x16 (near CPU) Slot 2: half-length, full-height, PCle 2.0 x1 Slot 3: half-length, full-height, PCle 2.0 x16 (x4 elec) Slot 4: half-length, full-height, PCl 2.3

#### Security

- Security chip: ST33ZP24AR28PVSP for TPM function, TCG 1.2-compliant
- Padlock loop
- (in rear for opt padlock; padlock prohibits side cover removal)
- Security slot (in rear for optional Kensington Microsaver cable; prohibits side cover removal)
  Power-on password
- Boot sequence control
- Boot without keyboard, mouse, diskette
- Serial port I/O control
- USB port disablement (front or all)

#### ThinkServer TS140 (70A5) - TopSeller (September 2013)

Product Specifications Reference (PSREF)

Type- model	Processor	Memory type	Memory DIMMs	Graphics	Pre- conf RAID	Storage	Optical		Discrete ethernet		Rack kit	Windows Server 2012 Preloaded	Base on-site warranty (-year)	
	Xeon E3-1225 v3 (4C/3.2GHz/8MB/1600MHz)	1600MHz ECC	4GBx1	Intel HD P4600	No	Open (4x3.5" Bay)	Slim DVD±RW	No	No	450W	No	No	1	

<sup>\*</sup> Model in italics shows that this is a Global Model. "UX" model does not include preloaded operating system.

• For detailed ThinkServer TS140 platform specifications, please see <u>ThinkServer TS140 Platform Specifications</u> sheet

Cyctomo	EasyStartup, EasyUpdate on all models;	Police I
Systems management	Intel Active Management Technology 9 on models with Xeon processor (KVM function needs Intel Xeon E3-12x5 v3 processors)	Drive bays
Chipset	Intel C226 Chipset	Western Street II
Processor	One LGA1150 socket, integrated 2-channel DDR3 memory controller, optional integrated processor graphics on selected processors	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
Memory type	1600MHz UDIMM, DDR3, ECC, 2-channel capable; 2GB, 4GB, and 8GB ECC UDIMMs are available	-10
Memory DIMM sockets	Four 240-pin DIMM sockets, up to 32GB ECC UDIMM (Actual memory operating speed depends on processor memory controller speed, installed memory speed, and quantity of memory DIMMs)	4
Graphics	Integrated Intel HD Graphics on Xeon E3-12x5 v3, Core i3, and Pentium processors, uses main memory, works along with discrete graphics to support multi-display, enables three display connectors (2 DisplayPort, 1 VGA) on rear ports (detailed information please see <i>Rear ports</i> section)  Also supports the following optional discrete graphics adapters:  NVIDIA Quadro NVS 300, PCIe x16 adapter, 512MB  NVIDIA Quadro 600, PCIe x16 adapter, 1GB	ThinkServer 5
Onboard SATA	Onboard ThinkServer RAID 100 SATA controller in chipset,	Left Front
controller	SATA 6.0Gb/s, RAID 0, 1, 5, 10 support	1: Standard E 95" 1 6" high aptical or
Drive bays	Up to four 3.5" hard drive bays (see right)	1: Standard 5.25", 1.6" high optical or optional slim optical + 4th 3.5" drive bay
Storage	3.5" SATA 6.0Gb/s hard drives, 7200 rpm	2: Optional 3rd 3.5" drive bay
Optical	Supports DVD-ROM or DVD±RW, 1.6" high or slim, SATA interface	or optional 4th 2.5" drive bay
Front ports	Two USB 3.0 (blue)	3: Optional 3rd 2.5" drive bay
Rear ports	One VGA and two DisplayPort for models with Intel HD Graphics, two USB 2.0, four USB 3.0 (blue), one serial (9-pin), one ethernet (RJ-45), three analog audio ports (line-in, line-out, mic-in)	4: Standard 3.5"/2.5" primary drive bay 5: Standard 3.5"/2.5" 2nd drive bay  Note:
Add-on ports (optional)	Supports the following:  • Single Parallel Port PCI Adapter (1xParallel)  • Single Serial Port PCI Adapter (1xSerial)  • Dual Serial Ports PCI Adapter (2xSerial PCI)  • Dual Serial Ports PCIe Adapter(2xSerial PCIe)	4x3.5" bays models: Bay 1, 2, 4, 5 are included in models 3x3.5" bays models: Bay 2, 4, 5 are included in models 2x3.5" bays models: Bay 4, 5 are included in models
Onboard Ethernet	One onboard gigabit ethernet, Intel I217	
Discrete Ethernet (optional)	Supports the following:  Intel Gigabit CT Desktop Adapter (1xGbE, RJ-45)  Intel Ethernet Server Adapter I350-T2 (2xGbE, RJ-45)  Intel Ethernet Server Adapter I350-T4 (4xGbE, RJ-45)	
Keyboard/Mouse	None (use USB port)	
Power supply	Supports one of the follwing, depending on models:  One fixed 280 watts, autosensing, 85%, 80 PLUS Bronze qualified  One fixed 450 watts, autosensing, 92%, 80 PLUS Platinum qualified	Expansion Slots
Form factor/ Rack-mountable	Tower, rack-mountable to 4U via optional ThinkServer Tower to Rack Shelf Conversion Kit (Option PN: 0C19515)	Slot 1: half-length, full-height, PCIe 3.0 x16 (near CPU) Slot 2: half-length, full-height, PCIe 2.0 x1
Mechanical	<ul> <li>25-liter, raven black color; metal case</li> <li>(WxDxH) 6.89"x 16.97"x 14.76"/175mm x 431mm x 375mm</li> <li>28.66 lb (13kg) max configuration</li> </ul>	Slot 2: Half-length, full-height, PCIe 2.0 x1 Slot 3: half-length, full-height, PCIe 2.0 x16 (x4 elec) Slot 4: half-length, full-height, PCI 2.3
Serviceability	<ul> <li>Toolless side cover removal</li> <li>Toolless disk and optical drive removal (standard bays)</li> <li>Toolless adapter retention</li> <li>Illuminated front icons</li> </ul>	Security  • Security chip: ST33ZP24AR28PVSP for TPM function, TCG 1.2-compliant  • Padlock loop
Base warranty	1 or 3-year parts and labor limited warranty	(in rear for opt padlock; padlock prohibits side cover removal)
Environmental certifications	GREENGUARD certified     Energy Star Server 1.1 qualified/     RoHS-compliant     More environmental information and requirements, please see     ThinkServer TS140 Platform Specifications sheet	Security slot (in rear for optional Kensington Microsaver cable; prohibits side cover removal)     Power-on password     Boot sequence control     Boot without keyboard, mouse, diskette
		Serial port I/O control     USB port disablement (front or all)

#### ThinkServer TS140 (70A0) - September 2013

Type- model	Processor	Memory type	Memory DIMMs	Graphics	Pre- conf RAID	Storage (Drive bays)	Optical	Add-on ports	Discrete ethernet	Power Supply	Rack kit	Windows Server 2012 Preloaded	Base on-site warranty (-year)
70A00003US	Xeon E3-1225 v3 (4C/3.2GHz/8MB/1600MHz)	1600MHz ECC	2GBx4	Intel HD P4600	RAID 0	4x500GB 3.5" SATA (4x3.5" Bay)	Slim DVD±RW	1xParallel	1x350-T2	280W	No	Foundation	1
70A00006US	Xeon E3-1225 v3 (4C/3.2GHz/8MB/1600MHz)	1600MHz ECC	2GBx4	Intel HD P4600	RAID 0	4x500GB 3.5" SATA (4x3.5" Bay)	Slim DVD±RW	No	2xIntel CT	280W	No	Foundation	1
70A00009UX	Xeon E3-1225 v3 (4C/3.2GHz/8MB/1600MHz)	1600MHz ECC	4GBx1	Intel HD P4600	No	Open (4x3.5" Bay)	Slim DVD±RW	No	No	280W	No	No	1
70A0000AUX	Xeon E3-1245 v3 (4C/3.4GHz/8MB/1600MHz)	1600MHz ECC	4GBx1	Intel HD P4600	No	Open (4x3.5" Bay)	Slim DVD±RW	No	No	280W	No	No	1
70A0000BUX	Xeon E3-1275 v3 (4C/3.5GHz/8MB/1600MHz)	1600MHz ECC	4GBx1	Intel HD P4600	No	Open (4x3.5" Bay)	Slim DVD±RW	No	No	280W	No	No	1
70A0000CUX	Xeon E3-1225 v3 (4C/3.2GHz/8MB/1600MHz)	1600MHz ECC	4GBx1	Intel HD P4600	No	1x500GB 3.5" SATA (4x3.5" Bay)	Slim DVD±RW	No	No	280W	No	No	1
70A0000DUS	Xeon E3-1225 v3 (4C/3.2GHz/8MB/1600MHz)	1600MHz ECC	4GBx1	Intel HD P4600	RAID 1	2x500GB 3.5" SATA (4x3.5" Bay)	Slim DVD±RW	No	No	280W	No	Foundation	1

<sup>\*</sup> Model in italics shows that this is a Global Model. "UX" model does not include preloaded operating system.

#### • For detailed ThinkServer TS140 platform specifications, please see ThinkServer TS140 Platform Specifications sheet



Type- model	Processor	Memory type	Memory DIMMs	Graphics	Pre- conf RAID	Storage	Optical	Add-on ports	Discrete ethernet	Power Supply	Rack kit	Windows Server 2012 Preloaded	Base on-site warranty (-year)
70A0000EUS	Xeon E3-1225 v3 (4C/3.2GHz/8MB/1600MHz)	1600MHz ECC	4GBx1	Intel HD P4600	RAID 1	2x500GB 3.5" SATA (4x3.5" Bay)	Slim DVD±RW	No	No	280W	No	Essentials	1
70A0000FUS	Xeon E3-1225 v3 (4C/3.2GHz/8MB/1600MHz)	1600MHz ECC	4GBx1	Intel HD P4600	RAID 1	2x500GB 3.5" SATA (4x3.5" Bay)	Slim DVD±RW	No	No	280W	No	Standard	1
70A0000GUX	Xeon E3-1225 v3 (4C/3.2GHz/8MB/1600MHz)	1600MHz ECC	8GBx1	Intel HD P4600	No	Open (4x3.5" Bay)	Slim DVD±RW	No	No	280W	No	No	1
70A0000HUX	Xeon E3-1245 v3 (4C/3.4GHz/8MB/1600MHz)	1600MHz ECC	8GBx1	Intel HD P4600	No	Open (4x3.5" Bay)	Slim DVD±RW	No	No	280W	No	No	1
70A0000JUX	Xeon E3-1275 v3 (4C/3.5GHz/8MB/1600MHz)	1600MHz ECC	8GBx1	Intel HD P4600	No	Open (4x3.5" Bay)	Slim DVD±RW	No	No	280W	No	No	1
70A0000KUS	Xeon E3-1225 v3 (4C/3.2GHz/8MB/1600MHz)	1600MHz ECC	8GBx1	Intel HD P4600	RAID 1	2x1TB 3.5" SATA (4x3.5" Bay)	Slim DVD±RW	No	No	280W	No	Foundation	1
70A0000LUS	Xeon E3-1225 v3 (4C/3.2GHz/8MB/1600MHz)	1600MHz ECC	8GBx1	Intel HD P4600	RAID 1	2x1TB 3.5" SATA (4x3.5" Bay)	Slim DVD±RW	No	No	280W	No	Essentials	1

<sup>\*</sup> Model in italics shows that this is a Global Model. "UX" model does not include preloaded operating system.

#### • For detailed ThinkServer TS140 platform specifications, please see ThinkServer TS140 Platform Specifications sheet



Type- model	Processor	Memory type	Memory DIMMs	Graphics	Pre- conf RAID	Storage	Optical	Add-on ports	Discrete ethernet	Power Supply	Rack kit	Windows Server 2012 Preloaded	Base on-site warranty (-year)
	Xeon E3-1225 v3 (4C/3.2GHz/8MB/1600MHz)	1600MHz ECC	8GBx1	Intel HD P4600	RAID 1	2x1TB 3.5" SATA (4x3.5" Bay)	Slim DVD±RW	No	No	280W	No	Standard	1
	Xeon E3-1245 v3 (4C/3.4GHz/8MB/1600MHz)	1600MHz ECC	8GBx1	Intel HD P4600	No	2x2TB 3.5" SATA (4x3.5" Bay)	Slim DVD±RW	No	1x350-T2	280W	No	No	3
	Xeon E3-1245 v3 (4C/3.4GHz/8MB/1600MHz)	1600MHz ECC	8GBx2	Intel HD P4600	No	2x2TB 3.5" SATA (4x3.5" Bay)	Slim DVD±RW	No	1x350-T2	280W	No	No	3
	Xeon E3-1245 v3 (4C/3.4GHz/8MB/1600MHz)	1600MHz ECC	8GBx4	Intel HD P4600	No	2x2TB 3.5" SATA (4x3.5" Bay)	Slim DVD±RW	No	1x350-T2	280W	No	No	3

<sup>\*</sup> Model in italics shows that this is a Global Model. "UX" model does not include preloaded operating system.

#### • For detailed ThinkServer TS140 platform specifications, please see ThinkServer TS140 Platform Specifications sheet

Systems	EasyStartup, EasyUpdate on all models;	Drive bays				
management	Intel Active Management Technology 9 on models with Xeon processor (KVM function needs Intel Xeon E3-12x5 v3 processors)	investigation in the second se				
Chipset	Intel C226 Chipset	Print area   B				
Processor	One LGA1150 socket, integrated 2-channel DDR3 memory controller, optional integrated processor graphics on selected processors					
Memory type	1600MHz UDIMM, DDR3, ECC, 2-channel capable; 2GB, 4GB, and 8GB ECC UDIMMs are available					
Memory DIMM sockets	Four 240-pin DIMM sockets, up to 32GB ECC UDIMM (Actual memory operating speed depends on processor memory controller speed, installed memory speed, and quantity of memory DIMMs)	4				
Graphics	<ul> <li>Integrated Intel HD Graphics on Xeon E3-12x5 v3, Core i3, and Pentium processors, uses main memory, works along with discrete graphics to support multi-display, enables three display connectors (2 DisplayPort, 1 VGA) on rear ports (detailed information please see <i>Rear ports</i> section)</li> <li>Also supports the following optional discrete graphics adapters:         <ul> <li>NVIDIA Quadro NVS 300, PCIe x16 adapter, 512MB</li> <li>NVIDIA Quadro 600, PCIe x16 adapter, 1GB</li> </ul> </li> </ul>	Left Front				
Onboard SATA controller	Onboard ThinkServer RAID 100 SATA controller in chipset, SATA 6.0Gb/s, RAID 0, 1, 5, 10 support	Leit				
Drive bays	Up to four 3.5" hard drive bays (see right)	1: Standard 5.25", 1.6" high optical or				
Storage	3.5" SATA 6.0Gb/s hard drives, 7200 rpm	optional slim optical + 4th 3.5" drive bay				
Optical	Supports DVD-ROM or DVD±RW, 1.6" high or slim, SATA interface	2: Optional 3rd 3.5" drive bay				
Front ports	Two USB 3.0 (blue)	or optional 4th 2.5" drive bay 3: Optional 3rd 2.5" drive bay				
Rear ports	One VGA and two DisplayPort for models with Intel HD Graphics, two USB 2.0, four USB 3.0 (blue), one serial (9-pin), one ethernet (RJ-45), three analog audio ports (line-in, line-out, mic-in)	4: Standard 3.5"/2.5" primary drive bay 5: Standard 3.5"/2.5" 2nd drive bay				
	Supports the following:	Note:				
Add-on ports (optional)	<ul> <li>Single Parallel Port PCI Adapter (1xParallel)</li> <li>Single Serial Port PCI Adapter (1xSerial)</li> <li>Dual Serial Ports PCI Adapter (2xSerial PCI)</li> <li>Dual Serial Ports PCIe Adapter(2xSerial PCIe)</li> </ul>	4x3.5" bays models: Bay 1, 2, 4, 5 are included in models 3x3.5" bays models: Bay 2, 4, 5 are included in models 2x3.5" bays models: Bay 4, 5 are included in models				
Onboard Ethernet	One onboard gigabit ethernet, Intel I217					
Discrete Ethernet (optional)	Supports the following:  Intel Gigabit CT Desktop Adapter (1xGbE, RJ-45)  Intel Ethernet Server Adapter I350-T2 (2xGbE, RJ-45)  Intel Ethernet Server Adapter I350-T4 (4xGbE, RJ-45)					
Keyboard/Mouse	None (use USB port)					
Power supply	Supports one of the follwing, depending on models:  One fixed 280 watts, autosensing, 85%, 80 PLUS Bronze qualified  One fixed 450 watts, autosensing, 92%, 80 PLUS Platinum qualified	Expansion Slots				
Form factor/ Rack-mountable	Tower, rack-mountable to 4U via optional ThinkServer Tower to Rack Shelf Conversion Kit (Option PN: 0C19515)	Slot 1: half-length, full-height, PCIe 3.0 x16 (near CPU) Slot 2: half-length, full-height, PCIe 2.0 x1 Slot 3: half-length, full-height, PCIe 2.0 x16 (x4 elec)				
Mechanical	<ul> <li>25-liter, raven black color; metal case</li> <li>(WxDxH) 6.89"x 16.97"x 14.76"/175mm x 431mm x 375mm</li> <li>28.66 lb (13kg) max configuration</li> </ul>	Slot 4: half-length, full-height, PCI 2.3  Security				
Serviceability	Toolless side cover removal     Toolless disk and optical drive removal (standard bays)     Toolless adapter retention     Illuminated front icons	Security     Security     Security     Security     Security     Security     Can be security     Securi				
Base warranty	1 or 3-year parts and labor limited warranty <sup>1</sup>	Security slot (in rear for optional Kensington Microsaver cable;				
Environmental certifications	GREENGUARD certified     Energy Star Server 1.1 qualified/     ROHS-compliant     More environmental information and requirements, please see <u>ThinkServer TS140 Platform Specifications</u> sheet	Security slot (in rear for optional Kensington Microsaver cable; prohibits side cover removal) Power-on password Boot sequence control Boot without keyboard, mouse, diskette Serial port I/O control USB port disablement (front or all)				

Type- model	Processor	Memory type	Memory DIMMs	Graphics	Pre- conf RAID	Storage	Optical	Add-on ports	Discrete ethernet	Power	Rack kit	Windows Server 2012 Preloaded	Base on-site warranty (-year)
	Xeon E3-1280 v3 (4C/3.6GHz/8MB/1600MHz)	1600MHz ECC	8GBx4	NVS 300	RAID 10		Slim DVD±RW	1xParallel	2xIntel CT	450W	No	Foundation	1
	Xeon E3-1280 v3 (4C/3.6GHz/8MB/1600MHz)	1600MHz ECC	8GBx4	Quadro 600	RAID 10		Slim DVD±RW	No	1xIntel CT	450W	No	Foundation	1

<sup>\*</sup> Model in italics shows that this is a Global Model. "UX" model does not include preloaded operating system.

#### • For detailed ThinkServer TS140 platform specifications, please see <u>ThinkServer TS140 Platform Specifications</u> sheet

Front
Front
/ in models
in models
in models
models dels
s (near CPU)
6 (x4 elec)
TDM function
TPM function,
gton Microsaver cable;
6

## ThinkServer TS140 Platform Specifications - System Specifications (I of III)

Components	Specification												
Form factor	Tower, rack-mountable	to 4U v	ia ThinkS	erver Towe	er to Rack S	helf Cor	version Kit (C	ption PN: 0C	19515)				
Chipset	Intel C226 Chipset												
Systems management	Intel Active Managem (KVM function needs     EasyStartup     EasyUpdate	ent Ted Intel X	chnology eon E3-12	9 on mode 2x5 v3 pro	Is with Xeor cessors)	n proces	sor						
Processor	One LGA1150 socket, supports one processo integrated 2-channel D								d processors.				
	The following processo	rs are s	upported	:									
	Processor Number	# of Cores	# of Threads	Clock Speed	Max Turbo Frequency	Cache	Memory speed	ECC Memory Supported	Processor Graphics				
	Xeon E3-1285 v3	4	8	3.6 GHz	4 GHz	8 MB	DDR3-1600	Yes	Intel HD Graphics 4700				
	Xeon E3-1280 v3	4	8	3.6 GHz	4 GHz	8 MB	DDR3-1600	Yes					
	Xeon E3-1275 v3	4	8	3.5 GHz	3.9 GHz	8 MB	DDR3-1600	Yes	Intel HD Graphics 4600				
	Xeon E3-1270 v3	4	8	3.5 GHz	3.9 GHz	8 MB	DDR3-1600	Yes					
	Xeon E3-1245 v3	4	8	3.4 GHz	3.8 GHz	8 MB	DDR3-1600	Yes	Intel HD Graphics 4600				
	Xeon E3-1240 v3	4	8	3.4 GHz	3.8 GHz	8 MB	DDR3-1600	Yes	Interrib diapnies 4000				
	Xeon E3-1230 v3	4	8	3.3 GHz	3.7 GHz	8 MB	DDR3-1600	Yes					
		-	-			-			Intel LID Overhier 1000				
	Xeon E3-1225 v3	4	4	3.2 GHz	3.6 GHz 3.5 GHz	8 MB	DDR3-1600	Yes	Intel HD Graphics 4600				
	Xeon E3-1220 v3	4	4	3.1 GHz	3.5 GHZ	8 MB	DDR3-1600	Yes	Latal LID Constitute 4000				
	Core i3-4340	2	4	3.6 GHz		4 MB	DDR3-1600	Yes	Intel HD Graphics 4600				
	Core i3-4330	2	4	3.5 GHz		4 MB	DDR3-1600	Yes	Intel HD Graphics 4600				
	Core i3-4130	2	4	3.4 GHz		3 MB	DDR3-1600	Yes	Intel HD Graphics 4400				
	Pentium G3430	2	2	3.3 GHz		3 MB	DDR3-1600	Yes	Intel HD Graphics				
	Pentium G3420	2	2	3.2 GHz		3 MB	DDR3-1600	Yes	Intel HD Graphics				
	Pentium G3220         2         2         3 GHz         3 MB         DDR3-1333         Yes         Intel HD G												
	Notes: All information is provided Intel may update this infor	Notes:  All information is provided by Intel and may be changed at any time without notice. The information herein is provided "as-is".  Intel may update this information in non-scheduled. For latest information, please see <a href="http://ark.intel.com/">http://ark.intel.com/</a>											
Memory type	1600MHz UDIMM, DDF	R3, EC	C, 2-chan	nel capabl	e; 2GB, 4GI	3, and 8	GB ECC UDIN	//Ms are availa	able				
Memory DIMM sockets	Four 240-pin DIMM soc	kets											
Memory capacity	Up to 32GB (8GBx4)												
Memory protection	ECC												
Additional	Actual memory operation	a sneed	denends d	n processo	r memory cor	troller sni	eed installed m	emory speed a	nd quantity of memory DIMMs				
memory disclaimers Onboard SATA controller	Onboard ThinkServer F RAID 0, 1, 5, 10 suppo Supports one 5.25" opt	RAID 10	00 SATA c	ontroller ir	chipset, S	ATA 6.00	ab/s,						
	up to one slim optical a	nd four	3.5"/2.5"	disk drive	bays (pend	ing 2.5"	disk drives ava	ailability):	•				
	1: Standard 5.25", 1.6" high optical or optional slim optical + 4th 3.5" drive bay 2: Optional 3rd 3.5" drive bay												
	-n							·	al 4th 2.5" drive bay				
		11	)		3	_	;	•	3rd 2.5" drive bay				
			CV.		4	-	_ 0	4: Standard	3.5"/2.5" primary drive bay				
Drive bays		5: Standard 3.5"/2.5" 2nd drive bay											
		.eft				FI	ront						
	Notes: Standard optical and har optional optical and hard on the large above is for reference optional 3.5" 3rd hard dr	drive ba ence onl	ays are ava v. Model in	ilable on mo	odels with the	correspo nal slim c	nding drives on optical + 3.5" 2nd	ly d hard drive bay	with supplemental fan (Bay 1) and				

Image above is for reference only. Model in this image contains optional slim optical + 3.5" 2nd hard drive bay with supplemental fan (Bay 1) and optional 3.5" 3rd hard drive bay (Bay 2)
 Optional slim optical + 3.5" drive bay (Bay 1) and optional 3rd 2.5" drive bay (Bay 3) can not be supported concurrently on one model.

## ThinkServer TS140 Platform Specifications (II of III)

Components	Specification											
Optical	Supports DVD±RW or DVD ROM, 1.6	" high or slim, SATA interface										
	<ul> <li>Integrated Intel HD Graphics on Xe</li> </ul>	on E3-12x5 v3, Core i3, and Pentium proces	ssors, uses main memory,									
	works along with discrete graphics enables three display connectors (2											
Graphics	(detailed information please see <b>Re</b>	ear ports section)										
•	<ul> <li>Also supports the following optiona</li> </ul>	I discrete graphics adapters:										
	<ul> <li>NVIDIA Quadro NVS 300, PCle x</li> <li>NVIDIA Quadro 600, PCle x16 ac</li> </ul>											
Front ports	Two USB 3.0 (blue)	дартет, тов										
Rear ports	One VGA and two DisplayPort for mod											
near ports		e serial (9-pin), one ethernet (RJ-45), three a	analog audio ports (line-in, line-out, mic-in)									
	Slot 1: half-length, full-height, PCIe 3.0 x16 (near CPU) Slot 2: half-length, full-height, PCIe 2.0 x1											
Expansion Slots	lot 3: half-length, full-height, PCIe 2.0 x16 (x4 elec)											
	Slot 4: half-length, full-height, PCI 2.3											
Onboard Ethernet		One onboard gigabit ethernet, Intel I217										
Discrete Ethernet	Supports the following:  Intel Gigabit CT Desktop Adapter (	1xGhF B.I-45)										
(optional)	<ul> <li>Intel Ethernet Server Adapter I350</li> </ul>	-T2 (2xGbE, RJ-45)										
	Intel Ethernet Server Adapter I350-	-T4 (4xGbE, RJ-45)										
Keyboard/mouse	None (use USB port)	and the second s										
Power supply	Supports one of the follwing, depending One fixed 280 watts, autosensing.	ng on models: 85% PSU, 80 PLUS Bronze qualified										
Juppiy		92% PSU, 80 PLUS Platinum qualified										
		P for TPM function, TCG 1.2-compliant										
		k; padlock prohibits side cover removal) nsington Microsaver cable; prohibits side co	ver removal)									
Coourity	Power-on password	isington wicrosaver cable, profibits side co-	ver removar)									
Security	Boot sequence control											
	<ul> <li>Boot without keyboard, mouse, disk</li> <li>Serial port I/O control</li> </ul>	ette										
	USB port disablement (front or all)											
	Raven black color; metal case											
Mechanical	• 6.89"W x 16.97"D x 14.76"H • 175mm W x 431mm D x 375mm H											
Micoriamical	• 28.66 lb (13kg) max configuration											
	• 25-liter	• 25-liter										
Com door bilib.	Toolless side cover removal     Toolless disk and optical drive removal (standard bays)											
Serviceability	<ul> <li>Toolless adapter retention</li> </ul>	· · · (-· · · · · · · · · · · · · · · ·										
	Illuminated front icons     GREENGUARD certified											
Environmental	Energy Star Server 1.1 qualified											
certifications	RoHŠ-compliant											
EMC	FCC Class A											
240VA	Supports											
Temperature - operating	50 °F to 95 °F (10 °C to 35 °C)											
Temperature -												
non operating	-10 °C to 60 °C											
(no package)												
Temperature - non operating	-40 °C to 70 °C											
(with package)												
Altitude - operating	Supported Altitude (unpressurized): 0	-10000ft (0-3048m)										
Humidity - operating	10%~80%, non-condensing											
Humidity - non operating	10%~90%, non-condensing											
(no package)	10 /6~30 /6, Horr-condensing											
Humidity -												
non operating (with package)	10%~90%, non-condensing											
(mai paokago)	Category	Min Configuration	Best Configuration									
	CPU	1 CPU	1 CPU									
	Optical Drive	0 DVD	1 DVD									
	Drive Bays	Up to one	Up to three									
Acquetic poice	HDD	1x 500GB SATA	3x 500GB SATA									
Acoustic noise (idle/working mode)	Memory	1x 2GB UDIMM	1x 2GB UDIMM									
(	PSU	280W	450W									
	RAID Add on cord	Embedded SATA	Embedded RAID									
	Add-on card Sound Pressure (operating)	No 26 dB(A)	1xVGA 35 dB(A)									
	Sound Pressure (operating) Sound Pressure (idle)	25 dB(A)	35 db(A) 34 dB(A)									
		20 45(1)	31 45(1)									

## ThinkServer TS140 Platform Specifications - System Specifications (III of III)

Components	Specification
Warranty	1 or 3-year limited warranty, parts and labor, more services information see <u>S-TS1</u> and <u>S-TS3</u> sheet
Preloaded operating systems	<ul> <li>Windows Server 2012 Foundation</li> <li>Windows Server 2012 Essentials</li> <li>Windows Server 2012 Standard</li> </ul>
Supported operating systems and virtualization software	Windows 7 Windows 8 Windows Server 2008 R2 Standard Windows Server 2008 R2 Enterprise Windows Small Business Server 2011 Essentials Windows Small Business Server 2011 Standard Windows Small Business Server 2011 Premium Add-On Notes:  1. Supported only, no preloaded models 2. Windows 7 and Windows 8 are not supported by EasyStartup

## ThinkServer TS140 Optional Configurations

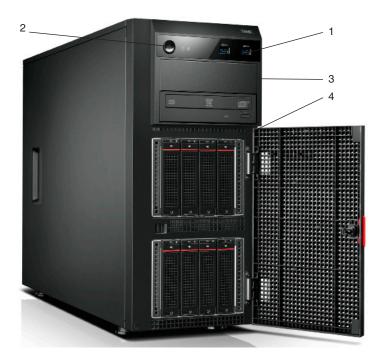
Memory	
ThinkServer 2GB DDR3L-1600MHz (1RX8) ECC UDIMM	0C19498
ThinkServer 4GB DDR3L-1600MHz (1RX8) ECC UDIMM	0C19499
ThinkServer 8GB DDR3L-1600MHz (2RX8) ECC UDIMM	0C19500
Disk Drive	
ThinkServer 3.5" 500GB 7.2K Enterprise SATA 6Gbps Hard Drive	0C19501
ThinkServer 3.5" 1TB 7.2K Enterprise SATA 6Gbps Hard Drive	0C19502
ThinkServer 3.5" 2TB 7.2K Enterprise SATA 6Gbps Hard Drive	0C19503
ThinkServer 3.5" 3TB 7.2K Enterprise SATA 6Gbps Hard Drive	0C19504
ThinkServer 3.5" 4TB 7.2K Enterprise SATA 6Gbps Hard Drive	0C19505
Connectivity	
ThinkServer 1Gbps Ethernet I350-T2 Server Adapter by Intel	0C19506
ThinkServer 1Gbps Ethernet I350-T4 Server Adapter by Intel	0C19507
ThinkServer CT2 1Gbps Single Port Base-T Ethernet Adapter by Intel	4XC0F28725
Parallel/Serial Port Adapter	
ThinkServer Single Parallel Port PCI Adapter	0C19508
ThinkServer Single Serial Port PCI Adapter	0C19509
ThinkServer Dual Serial Port PCI Adatper	0C19510
ThinkServer Dual Serial Port PCIe Adatper	0C19511
Graphics	
ThinkServer 1GB Quadro 600 Graphic Adapter by NVIDIA	0C19512
ThinkServer 512MB NVS 300 PCIe x16 Graphic Adapter by NVIDIA	0C19513
3.5" Hard Drive Conversion Kit	
ThinkServer 3.5" HDD to 5.25" Tray Convertor Kit	0C19514
ThinkServer 3.5" HDD to 5.25" Tray Convertor with Slim ODD Kit	0C19529
Tower to Rack Shelf Conversion Kit	
ThinkServer Tower to Rack Shelf Conversion Kit	0C19515

For more information on server accessories, please visit: www.lenovo.com/support/accessories www.lenovo.com/support/thinkserveraccessories www.lenovo.com/support/security

Other accessories at www.lenovo.com/accessories

Accessories Guide pdf at www.lenovo.com/accessoriesguide

#### ThinkServer TS440 - Overview

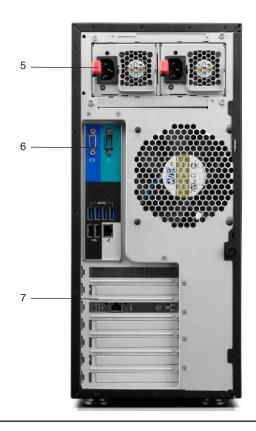


#### Rear view

- Power Supply: Up to two redundant 450 watts 80 PLUS Gold or fixed one 450 watts 80 PLUS Platinum
- 6. Rear I/O: 2 USB 2.0 4 USB 3.0(blue) 1 serial (9-pin) 1 RJ-45 (GbE) 1 VGA (for Intel HD Graphics)
- 7. 1 PCIe 3.0 x16 (with optional RAID adapter)
  1 PCIe 2.0 x1
  1 PCIe 2.0 x16 (x4 elec, with optional ethernet adapter)
  1 PCI

#### Front view

- 1. Front I/O: 2 USB 3.0 (blue)
- 2. Power Button
- Two 5.25" optical drive bays (up to one optical on models with onboard SATA controller)
- 4. Eight 3.5" hot-swap drive bays (Also supports: 4 x 3.5" direct cable bays, or 4 x 3.5" hot-swap bays, or 8 x 2.5" hot-swap bays)



#### Internal

- One LGA1150 socket, supports one processor from Intel Xeon E3-1200 v3 family
- 4 DIMM sockets, supports up to 32GB ECC UDIMM memory
- Up to eight hard drive bays

#### Mechanical

- · Tower, business black color, metal case
- Rack-mountable to 5U
- W x H (without foot) x D = 7.68"/195mm x 16.9"/430mm x 23.4"/595mm
- 61.7 lb (28kg) max configuration

Type- model <sup>1</sup>	Processor	Memory type	Memory DIMMs	Graphics	Disk Bays²	RAID controller	Pre- conf RAID	Storage	Optical	Add-on ports	Discrete ethernet	Windows Server 2012 Preloaded	Power Supply	Base on-site warranty (-year)
70AQ0005US	Xeon E3-1225 v3 (4C/3.2GHz/ 8MB/1600MHz)	1600MHz ECC	4GBx1	Intel HD P4600	4x3.5" HS	RAID 100 (onboard, 0/1/5/10)	RAID 1	2x500GB 3.5" SATA	1xDVD±RW	No	No	Foundation	1x450W (hot-swap, redundant with 2)	3
70AQ0006US	Xeon E3-1225 v3 (4C/3.2GHz/ 8MB/1600MHz)	1600MHz ECC	4GBx1	Intel HD P4600	4x3.5" HS	RAID 100 (onboard, 0/1/5/10)	RAID 1	2x500GB 3.5" SATA	1xDVD±RW	No	No	Essentials	1x450W (hot-swap, redundant with 2)	3
70AQ0007US	Xeon E3-1225 v3 (4C/3.2GHz/ 8MB/1600MHz)	1600MHz ECC	4GBx1	Intel HD P4600	4x3.5" HS	RAID 100 (onboard, 0/1/5/10)	RAID 1	2x500GB 3.5" SATA	1xDVD±RW	No	No	Standard	1x450W (hot-swap, redundant with 2)	3
70AQ0009UX	Xeon E3-1225 v3 (4C/3.2GHz/ 8MB/1600MHz)	1600MHz ECC	4GBx1	Intel HD P4600	4x3.5" HS	RAID 100 (onboard, 0/1/5/10)	No	Open	1xDVD±RW	No	No	No	1x450W (hot-swap, redundant with 2)	1
70AQ000AUX	Xeon E3-1225 v3 (4C/3.2GHz/ 8MB/1600MHz)	1600MHz ECC	4GBx1	Intel HD P4600	4x3.5" HS	RAID 100 (onboard, 0/1/5/10)	No	Open	1xDVD±RW	No	No	No	1x450W (hot-swap, redundant with 2)	3
70AQ000BUX	Xeon E3-1245 v3 (4C/3.4GHz/ 8MB/1600MHz)	1600MHz ECC	4GBx1	Intel HD P4600	4x3.5" HS	RAID 100 (onboard, 0/1/5/10)	No	Open	1xDVD±RW	No	No	No	1x450W (hot-swap, redundant with 2)	3
70AQ000CUX	Xeon E3-1245 v3 (4C/3.4GHz/ 8MB/1600MHz)	1600MHz ECC	4GBx1	Intel HD P4600	8x3.5" HS	RAID 500 (discrete, 0/1/10)	No	Open	1xDVD±RW	No	No	No	1x450W (hot-swap, redundant with 2)	3

<sup>1.</sup> Model in italics shows that this is a Global Model. "UX" model does not include preloaded operating system. 2. HS = Hot-swap, DC = Direct cable, non-hot swap

#### • For detailed ThinkServer TS440 platform specifications, please see <u>ThinkServer TS440 Platform Specifications</u> sheet

	To recurred transfer to the platform openiousless, pieuce set	•
Systems	Intel Active Management Technology 9     (KVM function needs Intel Xeon E3-12X5 v3 processors)	Optical Bays
management	EasyStartup	Two 5.25" optical bays for all models     (Up to one optical on onboard SATA controller models)
<b>5</b>	EasyUpdate	Hard Drive Bays
Chipset	Intel C226 Chipset	• Four 3.5" hard drive bays, no hot-swap, direct cable (4x3.5" DC)
Processor	One LGA1150 socket, integrated 2-channel DDR3 memory controller,	• Four 3.5" hot-swap hard drive bays (4x3.5" HS)
	optional integrated Intel HD Graphics on selected processors	Eight 3.5" hot-swap hard drive bays (8x3.5" HS)
Memory type	1600MHz UDIMM, DDR3, ECC, 2-channel capable	Eight 2.5" hot-swap hard drive bays (8x2.5" HS)
Memory DIMM	Four 240-pin DIMM sockets, up to 32GB ECC UDIMM (Actual memory operating speed depends on processor memory controller speed,	
sockets	installed memory speed, and quantity of memory DIMMs)	
	Integrated Intel HD Graphics on Xeon E3-12X5 v3 processors,	
	uses main memory,	000
Graphics	works along with discrete graphics to support multi-display, enables VGA connector on rear	
	(detailed information please see <i>Rear ports</i> section)	THE THE PERSON NAMED IN TH
	Supports optional discrete NVIDIA NVS 300 adapter, PCle x1, 512MB	[5] [5] [5] [5] [5] [6] [6] [6] [6] [6] [6] [6] [6] [6] [6
Onboard SATA	Onboard ThinkServer RAID 100 SATA controller in chipset, SATA	
controller	6.0Gb/s, RAID 0, 1, 5, 10 support	
	Supports the following:  ThinkServer RAID 500 adapter (LSI SAS 9240-8i), PCI Express bus,	
	SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 10 support;	
	optional upgrade key for ThinkServer RAID 500 adapter,	
Discreted SATA/	add RAID 5, 50 support	
SAS controller	ThinkServer RAID 700 adapter (LSI SAS 9260-8i), PCI Express bus, SATA 6.0Gb/s, SAS 6.0Gb/s,	
(optional)	RAID 0, 1, 5, 6, 10, 50, 60 support;	
	optional Intelligent Battery Backup Unit (iBBU08) for ThinkServer RAID	8 x 2.5" HS 4 x 3.5" HS 8 x 3.5" HS
	700 adapter	8 x 2.5" HS 4 x 3.5" HS 8 x 3.5" HS
	Notes: RAID 50 and 60 are supported on 8 hard drive bays models only	
Optical	Supports DVD±RW or DVD ROM, 1.6" high, SATA interface	Mechanical
Front ports	Two USB 3.0 (blue)	Tower, business black color, metal case
·	One VGA for models with Intel HD Graphics,	• W x Hx D = 7.68"/195mm x 16.9"/430mm x 23.4"/595mm
Rear ports	two USB 2.0, four USB 3.0 (blue), one serial (9-pin), one ethernet (RJ-45)	61.7 lb (28kg) max configuration
	Supports the following:	Rack-mountable to 5U     (via optional Tower to Rack Shelf Conversion Kit,
Add-on ports	Single Parallel Port PCI Adapter (1xParallel)	not included in standard model)
(optional)	Single Serial Port PCI Adapter (1xSerial)     Died Serial Ports PCI Adapter (2xSerial PCI)	Toolless side cover removal
,	Dual Serial Ports PCI Adapter (2xSerial PCI)     Dual Serial Ports PCIe Adapter (2xSerial PCIe)	Toolless disk and optical drive removal
Onboard Ethernet	One onboard gigabit ethernet, Intel I217	Toolless adapter retention     Illuminated front icons
	Supports the following:	
Discrete Ethernet	Intel Gigabit CT Desktop Adapter (1xGbE, RJ-45)	Expansion Slots
(optional)	<ul> <li>Intel Ethernet Server Adapter I350-T2 (2xGbE, RJ-45)</li> <li>Intel Ethernet Server Adapter I350-T4 (4xGbE, RJ-45)</li> </ul>	Slot 1: half-length, full-height, PCle 3.0 x16 (near CPU) Slot 2: half-length, full-height, PCle 2.0 x1
Keyboard/Mouse	None (use USB port)	Slot 2: naii-length, full-height, PCle 2.0 x1   Slot 3: half-length, full-height, PCle 2.0 x16 (x4 elec)
Power supply	Supports one of the follwing, depending on models:	Slot 4: half-length, full-height, PCI 2.3
. CC. Guppiy	<ul> <li>One fixed 450 watts, universal, 80 PLUS Platinum qualified</li> </ul>	Security
	• Up to two redundant 450 watts, two maximum, rear access, hot-swap,	Security     Security chip: ST33ZP24AR28PVSP for TPM function,
	80 PLUS Gold qualified, redundant with two power supplies	TCG 1.2-compliant
Base warranty	1 or 3-year parts and labor limited warranty <sup>1</sup>	Administrator password
	GREENGUARD certified     Formy Star Sorver 1.1 qualified	User password
Environmental	Energy Star Server 1.1 qualified     RoHS-compliant	Front panel key lock
certifications	More environmental information and requirements, please see	Boot sequence control     Boot without keyboard, mouse, diskette
	ThinkServer TS440 Platform Specifications sheet	Serial port I/O control
		USB port disablement (front or all)
- · · · · ·	anortant warranty information	. √ ,

Type- model <sup>1</sup>	Processor	Memory type	Memory DIMMs	Graphics	Disk Bays²	RAID controller	Pre- conf RAID	Storage	Optical	Add-on ports	Discrete ethernet	Windows Server 2012 Preloaded	Power Supply	Base on-site warranty (-year)
70AQ000DUX	Xeon E3-1225 v3 (4C/3.2GHz/ 8MB/1600MHz)	1600MHz ECC	4GBx1	Intel HD P4600	8x3.5" HS	RAID 500 (discrete, 0/1/10)	No	Open	1xDVD±RW	No	No	No	1x450W (hot-swap, redundant with 2)	3
70AQ000EUX	Xeon E3-1225 v3 (4C/3.2GHz/ 8MB/1600MHz)	1600MHz ECC	4GBx1	Intel HD P4600	8x2.5 HS	RAID 500 (discrete, 0/1/10)	No	Open	1xDVD±RW	No	No	No	1x450W (hot-swap, redundant with 2)	3
70AQ000FUX	Xeon E3-1245 v3 (4C/3.4GHz/ 8MB/1600MHz)	1600MHz ECC	4GBx1	Intel HD P4600	8x2.5 HS	RAID 500 (discrete, 0/1/10)	No	Open	1xDVD±RW	No	No	No	1x450W (hot-swap, redundant with 2)	3
70AQ000GUX	Xeon E3-1275 v3 (4C/3.5GHz/ 8MB/1600MHz)	1600MHz ECC	4GBx1	Intel HD P4600	4x3.5" HS	RAID 100 (onboard, 0/1/5/10)	No	Open	1xDVD±RW	No	No	No	1x450W (hot-swap, redundant with 2)	3
70AQ000HUX	Xeon E3-1225 v3 (4C/3.2GHz/ 8MB/1600MHz)	1600MHz ECC	4GBx1	Intel HD P4600	8x3.5" HS	RAID 700 (discrete, 0/1/5/6/10/50/60)	No	Open	1xDVD±RW	No	No	No	1x450W (hot-swap, redundant with 2)	3
70AQ000NUX	Xeon E3-1225 v3 (4C/3.2GHz/ 8MB/1600MHz)	1600MHz ECC	4GBx1	Intel HD P4600	4x3.5" HS	RAID 500 (discrete, 0/1/10)	No	Open	1xDVD	No	No	No	1x450W (hot-swap, redundant with 2)	1
70AQ000PUX	Xeon E3-1225 v3 (4C/3.2GHz/ 8MB/1600MHz)	1600MHz ECC	4GBx1	Intel HD P4600	4x3.5" HS	, RAID 500 (discrete, 0/1/10)	No	Open	1xDVD	No	No	No	1x450W (hot-swap, redundant with 2)	3

<sup>1.</sup> Model in italics shows that this is a Global Model. "UX" model does not include preloaded operating system. 2. HS = Hot-swap, DC = Direct cable, non-hot swap

### • For detailed ThinkServer TS440 platform specifications, please see <u>ThinkServer TS440 Platform Specifications</u> sheet

Systems	Intel Active Management Technology 9     (KVM function needs Intel Xeon E3-12X5 v3 processors)	Optical Bays
management	• EasyStartup	Two 5.25" optical bays for all models     (Up to one optical on onboard SATA controller models)
	EasyUpdate	Hard Drive Bays
Chipset	Intel C226 Chipset	• Four 3.5" hard drive bays, no hot-swap, direct cable (4x3.5" DC)
Processor	One LGA1150 socket, integrated 2-channel DDR3 memory controller, optional integrated Intel HD Graphics on selected processors	Four 3.5" hot-swap hard drive bays (4x3.5" HS)     Eight 3.5" hot-swap hard drive bays (8x3.5" HS)
Memory type	1600MHz UDIMM, DDR3, ECC, 2-channel capable	Eight 2.5" hot-swap hard drive bays (8x2.5" HS)
Memory DIMM sockets	Four 240-pin DIMM sockets, up to 32GB ECC UDIMM (Actual memory operating speed depends on processor memory controller speed, installed memory speed, and quantity of memory DIMMs)	
Graphics	<ul> <li>Integrated Intel HD Graphics on Xeon E3-12X5 v3 processors, uses main memory, works along with discrete graphics to support multi-display, enables VGA connector on rear (detailed information please see <i>Rear ports</i> section)</li> <li>Supports optional discrete NVIDIA NVS 300 adapter, PCIe x1, 512MB</li> </ul>	
Onboard SATA controller	Onboard ThinkServer RAID 100 SATA controller in chipset, SATA 6.0Gb/s, RAID 0, 1, 5, 10 support	
Discreted SATA/ SAS controller (optional)	Supports the following:  ThinkServer RAID 500 adapter (LSI SAS 9240-8i), PCI Express bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 10 support; optional upgrade key for ThinkServer RAID 500 adapter, add RAID 5, 50 support  ThinkServer RAID 700 adapter (LSI SAS 9260-8i), PCI Express bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 5, 6, 10, 50, 60 support; optional Intelligent Battery Backup Unit (iBBU08) for ThinkServer RAID 700 adapter	8 x 2.5" HS 4 x 3.5" HS 8 x 3.5" HS
	RAID 50 and 60 are supported on 8 hard drive bays models only	
Optical	Supports DVD±RW or DVD ROM, 1.6" high, SATA interface	Mechanical
Front ports	Two USB 3.0 (blue)	Tower, business black color, metal case     W x Hx D = 7.68"/195mm x 16.9"/430mm x 23.4"/595mm
Rear ports	One VGA for models with Intel HD Graphics, two USB 2.0, four USB 3.0 (blue), one serial (9-pin), one ethernet (RJ-45)	• 61.7 lb (28kg) max configuration     • Rack-mountable to 5U
Add-on ports (optional)  Onboard Ethernet	Supports the following:  Single Parallel Port PCI Adapter (1xParallel) Single Serial Port PCI Adapter (1xSerial) Dual Serial Ports PCI Adapter (2xSerial PCI) Dual Serial Ports PCIe Adapter (2xSerial PCIe) One onboard gigabit ethernet, Intel I217	(via optional Tower to Rack Shelf Conversion Kit, not included in standard model)     Toolless side cover removal     Toolless disk and optical drive removal     Toolless adapter retention
	Supports the following:	
Discrete Ethernet (optional)	<ul> <li>Intel Gigabit CT Desktop Adapter (1xGbE, RJ-45)</li> <li>Intel Ethernet Server Adapter I350-T2 (2xGbE, RJ-45)</li> <li>Intel Ethernet Server Adapter I350-T4 (4xGbE, RJ-45)</li> </ul>	Expansion Slots  Slot 1: half-length, full-height, PCle 3.0 x16 (near CPU)  Slot 2: half-length, full-height, PCle 2.0 x1
Keyboard/Mouse	None (use USB port)	Slot 3: half-length, full-height, PCIe 2.0 x16 (x4 elec)
Power supply	Supports one of the follwing, depending on models:  • One fixed 450 watts, universal, 80 PLUS Platinum qualified  • Up to two redundant 450 watts, two maximum, rear access, hot-swap, 80 PLUS Gold qualified, redundant with two power supplies	Slot 4: half-length, full-height, PCI 2.3  Security  Security  Security chip: ST33ZP24AR28PVSP for TPM function,
Base warranty	1 or 3-year parts and labor limited warranty <sup>1</sup>	TCG 1.2-compliant
Environmental certifications	GREENGUARD certified     Energy Star Server 1.1 qualified     RoHS-compliant     More environmental information and requirements, please see     ThinkServer TS440 Platform Specifications sheet	Administrator password     User password     Front panel key lock     Boot sequence control     Boot without keyboard, mouse, diskette     Serial port I/O control     USB port disablement (front or all)

## ThinkServer TS440 (70AN) - TopSeller (September 2013)

Product Specifications Reference (PSREF)

Type- model <sup>1</sup>	Processor	Memory type	Memory DIMMs	Graphics	Disk Bays²	RAID controller	Pre- conf RAID	Storage	Optical	Add-on ports	Discrete ethernet	Windows Server 2012 Preloaded	Power Supply	Base on-site warranty (-year)
	Xeon E3-1225 v3 (4C/3.2GHz/ 8MB/1600MHz)	1600MHz ECC	4GBx1	Intel HD P4600	4x3.5" HS	RAID 100 (onboard, 0/1/5/10)	No	Open	1xDVD	No	No	No	Fixed 450W (non-hot swap, no redundant)	1
70AN0002UX	Xeon E3-1225 v3 (4C/3.2GHz/ 8MB/1600MHz)	1600MHz ECC	4GBx1	Intel HD P4600	4x3.5" HS	RAID 100 (onboard, 0/1/5/10)	No	Open	1xDVD	No	No	No	Fixed 450W (non-hot swap, no redundant)	3

<sup>1.</sup> Model in italics shows that this is a Global Model. "UX" model does not include preloaded operating system. 2. HS = Hot-swap, DC = Direct cable, non-hot swap

#### • For detailed ThinkServer TS440 platform specifications, please see <u>ThinkServer TS440 Platform Specifications</u> sheet

Systems management	Intel Active Management Technology 9     (KVM function needs Intel Xeon E3-12X5 v3 processors)     EasyStartup     EasyUpdate	Optical Bays  • Two 5.25" optical bays for all models (Up to one optical on onboard SATA controller models)  Hard Drive Bays
Chipset	Intel C226 Chipset	• Four 3.5" hard drive bays, no hot-swap, direct cable (4x3.5" DC)
Processor	One LGA1150 socket, integrated 2-channel DDR3 memory controller, optional integrated Intel HD Graphics on selected processors	Four 3.5" hot-swap hard drive bays (4x3.5" HS)  Eight 3.5" hot-swap hard drive bays (8x3.5" HS)
Memory type	1600MHz UDIMM, DDR3, ECC, 2-channel capable	Eight 2.5" hot-swap hard drive bays (8x2.5" HS)
Memory DIMM sockets	Four 240-pin DIMM sockets, up to 32GB ECC UDIMM (Actual memory operating speed depends on processor memory controller speed, installed memory speed, and quantity of memory DIMMs)	
Graphics	<ul> <li>Integrated Intel HD Graphics on Xeon E3-12X5 v3 processors, uses main memory, works along with discrete graphics to support multi-display, enables VGA connector on rear (detailed information please see <i>Rear ports</i> section)</li> <li>Supports optional discrete NVIDIA NVS 300 adapter, PCIe x1, 512MB</li> </ul>	
Onboard SATA controller	Onboard ThinkServer RAID 100 SATA controller in chipset, SATA 6.0Gb/s, RAID 0, 1, 5, 10 support	
Discreted SATA/ SAS controller (optional)	<ul> <li>Supports the following:</li> <li>ThinkServer RAID 500 adapter (LSI SAS 9240-8i), PCI Express bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 10 support; optional upgrade key for ThinkServer RAID 500 adapter, add RAID 5, 50 support</li> <li>ThinkServer RAID 700 adapter (LSI SAS 9260-8i), PCI Express bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 5, 6, 10, 50, 60 support; optional Intelligent Battery Backup Unit (iBBU08) for ThinkServer RAID 700 adapter</li> </ul> Notes:	8 x 2.5" HS 4 x 3.5" HS 8 x 3.5" HS
	RAID 50 and 60 are supported on 8 hard drive bays models only	
Optical	Supports DVD±RW or DVD ROM, 1.6" high, SATA interface	Mechanical
Front ports	Two USB 3.0 (blue)	Tower, business black color, metal case     W x Hx D = 7.68"/195mm x 16.9"/430mm x 23.4"/595mm
Rear ports	One VGA for models with Intel HD Graphics, two USB 2.0, four USB 3.0 (blue), one serial (9-pin), one ethernet (RJ-45)	• 61.7 lb (28kg) max configuration     • Rack-mountable to 5U
Add-on ports (optional)	Supports the following:  Single Parallel Port PCI Adapter (1xParallel) Single Serial Port PCI Adapter (1xSerial) Dual Serial Ports PCI Adapter (2xSerial PCI) Dual Serial Ports PCIe Adapter (2xSerial PCIe)	(via optional Tower to Rack Shelf Conversion Kit, not included in standard model)  Toolless side cover removal  Toolless disk and optical drive removal  Toolless adapter retention
Onboard Ethernet	One onboard gigabit ethernet, Intel I217	Illuminated front icons
Discrete Ethernet	Supports the following:  Intel Gigabit CT Desktop Adapter (1xGbE, RJ-45)	Expansion Slots
(optional)	Intel Ethernet Server Adapter I350-T2 (2xGbE, RJ-45) Intel Ethernet Server Adapter I350-T4 (4xGbE, RJ-45)  Intel Ethernet Server Adapter I350-T4 (4xGbE, RJ-45)	Slot 1: half-length, full-height, PCIe 3.0 x16 (near CPU) Slot 2: half-length, full-height, PCIe 2.0 x1
Keyboard/Mouse	None (use USB port)	Slot 3: half-length, full-height, PCIe 2.0 x16 (x4 elec)
Power supply	Supports one of the follwing, depending on models:  One fixed 450 watts, universal, 80 PLUS Platinum qualified  Up to two redundant 450 watts, two maximum, rear access, hot-swap, 80 PLUS Gold qualified, redundant with two power supplies	Slot 4: half-length, full-height, PCI 2.3  Security  Security chip: ST33ZP24AR28PVSP for TPM function,
Base warranty	1 or 3-year parts and labor limited warranty <sup>1</sup>	TCG 1.2-compliant
Environmental certifications	GREENGUARD certified     Energy Star Server 1.1 qualified     RoHS-compliant     More environmental information and requirements, please see     ThinkServer TS440 Platform Specifications     sheet	Administrator password     User password     Front panel key lock     Boot sequence control     Boot without keyboard, mouse, diskette     Serial port I/O control     USB port disablement (front or all)

Type- model <sup>1</sup>	Processor	Memory type	Memory DIMMs	Graphics	Disk Bays²	RAID controller	Pre- conf RAID	Storage	Optical	Add-on ports	Discrete ethernet	Windows Server 2012 Preloaded	Power Supply	Base on-site warranty (-year)
70AM0000US	Xeon E3-1225 v3 (4C/3.2GHz/ 8MB/1600MHz)	1600MHz ECC	2GBx2	Intel HD P4600	4x3.5" DC	RAID 100 (onboard, 0/1/5/10)	RAID 1	2x500GB 3.5" SATA	1xDVD	No	1xIntel CT	Foundation	1x450W (hot-swap, redundant with 2)	1
70AM0001US	Xeon E3-1275 v3 (4C/3.5GHz/ 8MB/1600MHz)	1600MHz ECC	2GBx4	Intel HD P4600	8x3.5" HS	RAID 500+key (discrete, 0/1/5/10/50)	RAID 50	8x2TB 3.5" SATA	2xDVD±RW	No	1xIntel CT	Foundation	2x450W (hot-swap, redundant with 2)	1
70AM0002UX	Xeon E3-1280 v3 (4C/3.6GHz/ 8MB/1600MHz)	1600MHz ECC	4GBx3	NVS 300	8x2.5 HS	RAID 700 (discrete, 0/1/5/6/10/50/60)	RAID 6	3x600GB 2.5" SAS	1xDVD	No	1x350-T4	No	1x450W (hot-swap, redundant with 2)	1
70AM0003US	Xeon E3-1285 v3 (4C/3.6GHz/ 8MB/1600MHz)	1600MHz ECC	8GBx4	Intel HD P4700	8x2.5 HS	RAID 700 (discrete, 0/1/5/6/10/50/60)	RAID 60	8x900GB 2.5" SAS	1xDVD±RW	No	1x350-T2	Foundation	2x450W (hot-swap, redundant with 2)	1
70AM0004UX	Xeon E3-1225 v3 (4C/3.2GHz/ 8MB/1600MHz)	1600MHz ECC	4GBx1	P4600	4x3.5" HS	RAID 100 (onboard, 0/1/5/10)	No	Open	1xDVD	No	No	No	1x450W (hot-swap, redundant with 2)	3

<sup>1.</sup> Model in italics shows that this is a Global Model. "UX" model does not include preloaded operating system. 2. HS = Hot-swap, DC = Direct cable, non-hot swap

#### • For detailed ThinkServer TS440 platform specifications, please see ThinkServer TS440 Platform Specifications sheet

Systems management	Intel Active Management Technology 9     (KVM function needs Intel Xeon E3-12X5 v3 processors)     EasyStartup	Optical Bays  • Two 5.25" optical bays for all models (Up to one optical on onboard SATA controller models)
011	• EasyUpdate	Hard Drive Bays
Chipset	Intel C226 Chipset	• Four 3.5" hard drive bays, no hot-swap, direct cable (4x3.5" DC)
Processor	One LGA1150 socket, integrated 2-channel DDR3 memory controller, optional integrated Intel HD Graphics on selected processors	<ul> <li>Four 3.5" hot-swap hard drive bays (4x3.5" HS)</li> <li>Eight 3.5" hot-swap hard drive bays (8x3.5" HS)</li> </ul>
Memory type	1600MHz UDIMM, DDR3, ECC, 2-channel capable	• Eight 2.5" hot-swap hard drive bays (8x2.5" HS)
Memory DIMM sockets	Four 240-pin DIMM sockets, up to 32GB ECC UDIMM (Actual memory operating speed depends on processor memory controller speed, installed memory speed, and quantity of memory DIMMs)	
Graphics	<ul> <li>Integrated Intel HD Graphics on Xeon E3-12X5 v3 processors, uses main memory, works along with discrete graphics to support multi-display, enables VGA connector on rear (detailed information please see <i>Rear ports</i> section)</li> <li>Supports optional discrete NVIDIA NVS 300 adapter, PCIe x1, 512MB</li> </ul>	
Onboard SATA controller	Onboard ThinkServer RAID 100 SATA controller in chipset, SATA 6.0Gb/s, RAID 0, 1, 5, 10 support	
Discreted SATA/ SAS controller (optional)	<ul> <li>Supports the following:</li> <li>ThinkServer RAID 500 adapter (LSI SAS 9240-8i), PCI Express bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 10 support; optional upgrade key for ThinkServer RAID 500 adapter, add RAID 5, 50 support</li> <li>ThinkServer RAID 700 adapter (LSI SAS 9260-8i), PCI Express bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 5, 6, 10, 50, 60 support; optional Intelligent Battery Backup Unit (iBBU08) for ThinkServer RAID 700 adapter</li> </ul>	8 x 2.5" HS 4 x 3.5" HS 8 x 3.5" HS
	Notes: RAID 50 and 60 are supported on 8 hard drive bays models only	
Optical	Supports DVD±RW or DVD ROM, 1.6" high, SATA interface	Mechanical
Front ports	Two USB 3.0 (blue)	Tower, business black color, metal case
Rear ports	One VGA for models with Intel HD Graphics, two USB 2.0, four USB 3.0 (blue), one serial (9-pin), one ethernet (RJ-45)	W x Hx D = 7.68"/195mm x 16.9"/430mm x 23.4"/595mm     1.7 lb (28kg) max configuration      Deal may be a 51.1.
Add-on ports (optional)	Supports the following:  Single Parallel Port PCI Adapter (1xParallel)  Single Serial Port PCI Adapter (1xSerial)  Dual Serial Ports PCI Adapter (2xSerial PCI)  Dual Serial Ports PCIe Adapter (2xSerial PCIe)  One onboard gigabit ethernet, Intel I217	Rack-mountable to 5U (via optional Tower to Rack Shelf Conversion Kit, not included in standard model) Toolless side cover removal Toolless disk and optical drive removal Toolless adapter retention
Onboard Ethernet	Supports the following:	Illuminated front icons
Discrete Ethernet (optional)	<ul> <li>Intel Gigabit CT Desktop Adapter (1xGbE, RJ-45)</li> <li>Intel Ethernet Server Adapter I350-T2 (2xGbE, RJ-45)</li> <li>Intel Ethernet Server Adapter I350-T4 (4xGbE, RJ-45)</li> </ul>	Expansion Slots  Slot 1: half-length, full-height, PCle 3.0 x16 (near CPU)  Slot 2: half-length, full-height, PCle 2.0 x1
Keyboard/Mouse	None (use USB port)	Slot 3: half-length, full-height, PCIe 2.0 x16 (x4 elec)
Power supply	Supports one of the follwing, depending on models:  One fixed 450 watts, universal, 80 PLUS Platinum qualified  Up to two redundant 450 watts, two maximum, rear access, hot-swap, 80 PLUS Gold qualified, redundant with two power supplies	Slot 4: half-length, full-height, PCI 2.3  Security  Security Security chip: ST33ZP24AR28PVSP for TPM function, TCG 1.2-compliant
Base warranty	1 or 3-year parts and labor limited warranty <sup>1</sup>	Administrator password
Environmental certifications	GREENGUARD certified     Energy Star Server 1.1 qualified     RoHS-compliant     More environmental information and requirements, please see     ThinkServer TS440 Platform Specifications     sheet	User password     User password     Front panel key lock     Boot sequence control     Boot without keyboard, mouse, diskette     Serial port I/O control     USB port disablement (front or all)

Type- model <sup>1</sup>	Processor	Memory type	Memory DIMMs	Graphics	Disk Bays²	RAID controller	Pre- conf RAID	Storage	Optical	Add-on ports	Discrete ethernet	Windows Server 2012 Preloaded	Power Supply	Base on-site warranty (-year)
70AL0000US	Xeon E3-1225 v3 (4C/3.2GHz/ 8MB/1600MHz)	1600MHz ECC	8GBx3	NVS 300	4x3.5" HS	RAID 100 (onboard, 0/1/5/10)	RAID 5	3x3TB 3.5" SATA	1xDVD±RW	No	1x350-T2	Foundation	Fixed 450W (non-hot swap, no redundant)	1
70AL0002UX	Xeon E3-1225 v3 (4C/3.2GHz/ 8MB/1600MHz)	1600MHz ECC	4GBx1	Intel HD P4600	4x3.5" HS	RAID 100 (onboard, 0/1/5/10)	No	1x500GB 3.5" SATA	1xDVD	No	No	No	Fixed 450W (non-hot swap, no redundant)	3
70AL0003UX	Xeon E3-1225 v3 (4C/3.2GHz/ 8MB/1600MHz)	1600MHz ECC	4GBx1	Intel HD P4600	4x3.5" HS	RAID 100 (onboard, 0/1/5/10)	No	Open	1xDVD	No	No	No	Fixed 450W (non-hot swap, no redundant)	3

<sup>1.</sup> Model in italics shows that this is a Global Model. "UX" model does not include preloaded operating system. 2. HS = Hot-swap, DC = Direct cable, non-hot swap

#### • For detailed ThinkServer TS440 platform specifications, please see ThinkServer TS440 Platform Specifications sheet

Systems management	Intel Active Management Technology 9     (KVM function needs Intel Xeon E3-12X5 v3 processors)     EasyStartup	Optical Bays  Two 5.25" optical bays for all models (Up to one optical on onboard SATA controller models)
011	• EasyUpdate	Hard Drive Bays
Chipset	Intel C226 Chipset	• Four 3.5" hard drive bays, no hot-swap, direct cable (4x3.5" DC)
Processor	One LGA1150 socket, integrated 2-channel DDR3 memory controller, optional integrated Intel HD Graphics on selected processors	<ul> <li>Four 3.5" hot-swap hard drive bays (4x3.5" HS)</li> <li>Eight 3.5" hot-swap hard drive bays (8x3.5" HS)</li> </ul>
Memory type	1600MHz UDIMM, DDR3, ECC, 2-channel capable	Eight 2.5" hot-swap hard drive bays (8x2.5" HS)
Memory DIMM sockets	Four 240-pin DIMM sockets, up to 32GB ECC UDIMM (Actual memory operating speed depends on processor memory controller speed, installed memory speed, and quantity of memory DIMMs)	
Graphics	<ul> <li>Integrated Intel HD Graphics on Xeon E3-12X5 v3 processors, uses main memory, works along with discrete graphics to support multi-display, enables VGA connector on rear (detailed information please see <i>Rear ports</i> section)</li> <li>Supports optional discrete NVIDIA NVS 300 adapter, PCIe x1, 512MB</li> </ul>	
Onboard SATA controller	Onboard ThinkServer RAID 100 SATA controller in chipset, SATA 6.0Gb/s, RAID 0, 1, 5, 10 support	
Discreted SATA/ SAS controller (optional)	<ul> <li>Supports the following:</li> <li>ThinkServer RAID 500 adapter (LSI SAS 9240-8i), PCI Express bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 10 support; optional upgrade key for ThinkServer RAID 500 adapter, add RAID 5, 50 support</li> <li>ThinkServer RAID 700 adapter (LSI SAS 9260-8i), PCI Express bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 5, 6, 10, 50, 60 support; optional Intelligent Battery Backup Unit (iBBU08) for ThinkServer RAID 700 adapter</li> </ul>	8 x 2.5" HS 4 x 3.5" HS 8 x 3.5" HS
	Notes: RAID 50 and 60 are supported on 8 hard drive bays models only	
Optical	Supports DVD±RW or DVD ROM, 1.6" high, SATA interface	Mechanical
Front ports	Two USB 3.0 (blue)	Tower, business black color, metal case
Rear ports	One VGA for models with Intel HD Graphics, two USB 2.0, four USB 3.0 (blue), one serial (9-pin), one ethernet (RJ-45)	W x Hx D = 7.68"/195mm x 16.9"/430mm x 23.4"/595mm     1.7 lb (28kg) max configuration
Add-on ports (optional)	Supports the following:  Single Parallel Port PCI Adapter (1xParallel) Single Serial Port PCI Adapter (1xSerial) Dual Serial Ports PCI Adapter (2xSerial PCI) Dual Serial PCI PCI Adapter (2xSerial PCIe)	Rack-mountable to 5U (via optional Tower to Rack Shelf Conversion Kit, not included in standard model) Toolless side cover removal Toolless disk and optical drive removal Toolless adapter retention
Onboard Ethernet	One onboard gigabit ethernet, Intel I217 Supports the following:	Illuminated front icons
Discrete Ethernet (optional)	<ul> <li>Intel Gigabit CT Desktop Adapter (1xGbE, RJ-45)</li> <li>Intel Ethernet Server Adapter I350-T2 (2xGbE, RJ-45)</li> <li>Intel Ethernet Server Adapter I350-T4 (4xGbE, RJ-45)</li> </ul>	Expansion Slots Slot 1: half-length, full-height, PCle 3.0 x16 (near CPU) Slot 2: half-length, full-height, PCle 2.0 x1
Keyboard/Mouse	None (use USB port)	Slot 3: half-length, full-height, PCIe 2.0 x16 (x4 elec)
Power supply	Supports one of the follwing, depending on models:  One fixed 450 watts, universal, 80 PLUS Platinum qualified  Up to two redundant 450 watts, two maximum, rear access, hot-swap, 80 PLUS Gold qualified, redundant with two power supplies	Slot 4: half-length, full-height, PCI 2.3  Security  Security  Security chip: ST33ZP24AR28PVSP for TPM function,
Base warranty	1 or 3-year parts and labor limited warranty <sup>1</sup>	TCG 1.2-compliant  • Administrator password
Environmental certifications	GREENGUARD certified     Energy Star Server 1.1 qualified     RoHS-compliant     More environmental information and requirements, please see     ThinkServer TS440 Platform Specifications     sheet	User password     User password     Front panel key lock     Boot sequence control     Boot without keyboard, mouse, diskette     Serial port I/O control     USB port disablement (front or all)

## ThinkServer TS440 Platform Specifications - I of III

Components	Specification							=				
Form factor	Tower, rack-mountable to 5U via ThinkServer Tower to Rack Shelf Conversion Kit (Option PN: 0C19515)											
Chipset	Intel C226 Chipset Intel Active Managem	ont Too	hnology	0 (K)/N/I f···	action nood	Intol V	on E3.12VE	/3 processors	1			
Systems management	EasyUpdate	ieni iec	rinology	e (KVIVI IUI	iction needs	S IIILEI X	5011 L3-12X3 V	73 processors	)			
Processor	One LGA1150 socket, supports one processo integrated 2-channel Di	upports one processor from Intel Xeon E3-1200 v3 family, ntegrated 2-channel DDR3 memory controller, optional integrated processor graphics on Xeon E5-12X5 v3 processors.										
	The following processors are supported:    Processor Number											
	Xeon E3-1285 v3	4	8	3.6 GHz	4 GHz	8 MB	DDR3-1600	Yes	Intel HD Graphics P4700			
	Xeon E3-1280 v3	4	8	3.6 GHz	4 GHz	8 MB	DDR3-1600	Yes				
	Xeon E3-1275 v3	4	8	3.5 GHz	3.9 GHz	8 MB	DDR3-1600	Yes	Intel HD Graphics P4600			
	Xeon E3-1270 v3	4	8	3.5 GHz	3.9 GHz	8 MB	DDR3-1600	Yes				
	Xeon E3-1245 v3	4	8	3.4 GHz	3.8 GHz	8 MB	DDR3-1600	Yes	Intel HD Graphics P4600			
	Xeon E3-1240 v3	4	8	3.4 GHz	3.8 GHz	8 MB	DDR3-1600	Yes	·			
	Xeon E3-1230 v3	4	8	3.3 GHz	3.7 GHz	8 MB	DDR3-1600	Yes				
	Xeon E3-1225 v3	4	4	3.2 GHz	3.6 GHz	8 MB	DDR3-1600	Yes	Intel HD Graphics P4600			
	Xeon E3-1220 v3	4	4	3.1 GHz	3.5 GHz	8 MB	DDR3-1600	Yes				
	Notes:	_ 4	- 4	J.1 GHZ	0.0 GITZ	O IVID	1000 -פנוסם	169				
	All information is provided Intel may update this inform	by Intel ination in	and may b non-sche	e changed a duled. For la	nt any time wi ntest informati	thout notic	ce. The informat e see <u>http://ark.</u>	ion herein is pro intel.com/	ovided "as-is".			
Memory type	1600MHz UDIMM, DDF	R3, EC	C, 2-chan	nel capabl	e; 2GB, 4GI	3, and 80	GB ECC UDIN	/IMs are avail	able			
Memory DIMM sockets	Four 240-pin DIMM soc	kets										
Memory capacity	Up to 32GB (8GBx4)											
Memory protection	ECC											
Additional	Actual memory operating	g speed	depends d	on processo	r memory con	troller spe	eed, installed m	emory speed, a	nd quantity of memory DIMMs			
memory disclaimers Onboard SATA	Onboard ThinkServer F	RAID 10	IN SATA C	ontroller in	chineat SA	ΔTΔ 6 ΩG	h/e					
Discreted SATA/SAS controller (optional)	optional upgrade key add RAID 5, 50 supp ThinkServer RAID 7( RAID 0, 1, 5, 6, 10, 5 optional Intelligent Bandtes: RAID 50 and 60 are suppo	for Thi oort 00 adap 50, 60 s attery E	nkSèrver oter (LSI s upport; sackup Ui	RAID 500 SAS 9260- nit (iBBU08	adapter, 8i), PCI Exp 3) for ThinkS	ress bus	s, SATA 6.0Gb	/s, SAS 6.0G	b/s, RAID 0, 1, 10 support; b/s,			
Drive bays	Supports two 5.25" opti supports up to eight ha • 4 x 3.5" DC: Four 3.5 • 4 x 3.5" HS: Eight 3.6 • 8 x 3.5" HS: Eight 2.6 • 8 x 2.5" HS: Eight 2.6  8 x 2.5" hot-swap  Notes: Hard drive bays are behind	rd drive;" hard; " hot-s 5" hot-s 6" hot-s 4 x 3	bays, ondrive bays wap hard wap hard wap hard	le of the fo s, no hot-s drive bays I drive bays I drive bays	llowing are s wap, direct of (onboard F s (needs dis	supporte cable (o AAID 100 crted RA crted RA	ed: inboard RAID ocontroller for AID adapter, s	100 controller SATA, discret upports SATA	r, SATA only) te RAID adapter for SATA/SAS) /SAS)			

## ThinkServer TS440 Platform Specifications - II of III

Components	Specification								
Optical	Supports DVD±RW or DVD ROM, 1.6	" high, SATA interface							
		on E3-12X5 v3 processors, uses main mem	norv.						
	works along with discrete graphics		,						
Graphics	enables VGA connector on rear								
G. G	(detailed information please see <i>Rear ports</i> section)								
	<ul> <li>Also supports the following optional discrete graphics adapters:</li> <li>NVIDIA NVS 300, PCIe x1 adapter, 512MB</li> </ul>								
Front ports	Two USB 3.0 (blue)	ei, 312MD							
•	One VGA for models with Intel HD Gra	anhice							
Rear ports	two USB 2.0, four USB 3.0 (blue), one	e serial (9-pin), one ethernet (BJ-45)							
	Supports the following:	2 3 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1							
Add-on ports	Single Parallel Port PCI Adapter (1)	xParallel)							
(optional)	<ul> <li>Single Serial Port PCI Adapter (1xS)</li> </ul>	Serial)							
(optional)	<ul> <li>Dual Serial Ports PCI Adapter (2xS)</li> </ul>	erial PCI)							
	Dual Serial Ports PCle Adapter(2x5)     Slot 1: bolf langth full beight PCle 2.6								
	Slot 1: half-length, full-height, PCle 3.0   Slot 2: half-length, full-height, PCle 2.0								
Expansion Slots	Slot 3: half-length, full-height, PCIe 2.0								
	Slot 4: half-length, full-height, PCI 2.3								
Onboard Ethernet	One onboard gigabit ethernet, Intel I2	17							
	Supports the following:								
Discrete Ethernet	<ul> <li>Intel Gigabit CT Desktop Adapter (</li> </ul>	1xGbE, RJ-45)							
(optional)	<ul> <li>Intel Ethernet Server Adapter 1350-</li> </ul>	-T2 (2xGbE, RJ-45)							
	Intel Ethernet Server Adapter I350-	-14 (4XGDE, HJ-45)							
Keyboard/mouse	None (use USB port)	and the second s							
Power ourst.	Supports one of the follwing, depending								
Power supply	<ul> <li>One fixed 450 watts, universal, 80 l</li> <li>Up to two redundant 450 watts, two</li> </ul>		S Gold qualified, redundant with two power supplies						
	1 1	P for TPM function, TCG 1.2-compliant	5 doid quaimed, reduitdant with two power supplies						
	Security cnip: \$1332P24AR28PVSF     Administrator password	r ioi i rivi iuniciion, i od i.2-compilant							
	User password								
Security	Front panel key lock								
Cocumy	Boot sequence control								
	Boot without keyboard, mouse, disk     Social part I/O control	ette							
	<ul><li>Serial port I/O control</li><li>USB port disablement (front or all)</li></ul>								
	Tower, business black color, metal call	ase							
Machanical	• W x H (without foot) x D = 7.68"/195mm x 16.9"/430mm x 23.4"/595mm								
Mechanical	• 61.7 lb (28kg) max configuration								
	Rack-mountable to 5U								
	Toolless side cover removal  Toolless side cover removal	l							
Serviceability	<ul> <li>Toolless disk and optical drive remover</li> <li>Toolless adapter retention</li> </ul>	vai							
	Illuminated front icons								
Cardina a a a a tal	GREENGUARD certified								
Environmental certifications	<ul> <li>Energy Star Server 1.1 qualified</li> </ul>								
	RoHŠ-compliant								
EMC	FCC Class A								
240VA	Supports								
Temperature -	50 0 F to 0 F 0 F (10 0 C to 0 F 0 C)								
operating	50 °F to 95 °F (10 °C to 35 °C)								
Temperature -									
non operating	-10 °C to 60 °C								
(no package)	<del> </del>								
Temperature - non operating	-40 °C to 70 °C								
(with package)	-40 0 10 70 0								
Altitude - operating	Supported Altitude (unpressurized): 0-	-10000ft (0-3048m)							
Humidity - operating	10%~80%, non-condensing	1000011 (0 0010111)							
Humidity - operating	10 /0~00 /0, 11011-0011461151119								
non operating	10%~90%, non-condensing								
(no package)	1070 0070, Horr-condensing								
Humidity -									
non operating	10%~90%, non-condensing								
(with package)									
	Catagory	Mainatraam Canfiguretian	Full Configuration						
	Category	Mainstream Configuration	Full Configuration						
	CPU	Xeon	Xeon						
	Optical Drive DVD-ROM DVD-ROM								
	HDD Controller onboard SATA SAS Controller								
	HDD Bays 4 x 3.5" SATA (direct cable) 8 x 3.5" SAS (hot-swap)								
Acoustic noise	HDD 4x 1TB SATA 8x 600GB SAS								
(idle/working mode)	Memory 1 x 2GB UDIMM ECC 4 x 4GB UDIMM ECC								
	PSU	Fixed	Redundant						
	. 55								
	Management	Basic IPMI mgmt, reporting	Basic IPMI mgmt, reporting						
		Basic IPMI mgmt, reporting SATA RAID 0/1	Basic IPMI mgmt, reporting SAS RAID 5						
	Management RAID	SATA RAID 0/1	SAS RAID 5						
	Management								

## ThinkServer TS440 Platform Specifications - III of III

Components	Specification
Warranty	1 or 3-year limited warranty, parts and labor, more services information see <u>S-TS1</u> and <u>S-TS3</u> sheet
Preloaded operating systems	<ul> <li>Windows Server 2012 Foundation</li> <li>Windows Server 2012 Essentials</li> <li>Windows Server 2012 Standard</li> </ul>
Supported operating systems and virtualization software	Windows Server 2008 R2 Standard     Windows Server 2012 Datacenter     Windows Server 2012 Datacenter     Windows Small Business Server 2011 Essentials     Windows Small Business Server 2011 Standard     Windows Small Business Server 2011 Premium Add-On     Red Hat Enterprise Linux 6.4     VMware ESXi 5.1 U1 (Discrete RAID controller, add-on ethernet controller, and Intel Xeon E3-12x5 v3 processors are needed)  Notes:     Supported only, no preloaded models     For latest VMware compatibility list for ThinkServer, please see <a href="http://www.vmware.com/resources/compatibility/search.php">http://www.vmware.com/resources/compatibility/search.php</a> For latest Red Hat compatibility list for ThinkServer, please see <a href="http://www.vmware.com/resources/compatibility/search.php">https://www.vmware.com/resources/compatibility/search.php</a> For latest Red Hat compatibility list for ThinkServer, please see <a href="https://hardware.redhat.com/">https://hardware.redhat.com/</a> 4. These supported operating systems are also supported by EasyStartup

## ThinkServer TS440 Optional Configurations

Memory	
ThinkServer 2GB DDR3L-1600MHz (1RX8) ECC UDIMM	0C19498
ThinkServer 4GB DDR3L-1600MHz (1RX8) ECC UDIMM	0C19499
ThinkServer 8GB DDR3L-1600MHz (2RX8) ECC UDIMM	0C19500
Disk Drive	00.0000
ThinkServer 3.5" 500GB 7.2K Enterprise SATA 6Gbps Hard Drive	0C19501
ThinkServer 3.5" 1TB 7.2K Enterprise SATA 6Gbps Hard Drive	0C19502
ThinkServer 3.5" 2TB 7.2K Enterprise SATA 6Gbps Hard Drive	0C19503
	0C19503
ThinkServer 3.5" 3TB 7.2K Enterprise SATA 6Gbps Hard Drive	
ThinkServer 3.5" 4TB 7.2K Enterprise SATA 6Gbps Hard Drive	0C19505
ThinkServer 3.5" 500GB 7.2K Enterprise SATA 6Gbps Hot Swap Hard Drive	0A89473
ThinkServer 3.5" 1TB 7.2K Enterprise SATA 6Gbps Hot Swap Hard Drive	0A89474
ThinkServer 3.5" 2TB 7.2K Enterprise SATA 6Gbps Hot Swap Hard Drive	0A89475
ThinkServer 3.5" 3TB 7.2K Enterprise SATA 6Gbps Hot Swap Hard Drive	0A89477
ThinkServer 3.5" 4TB 7.2K Enterprise SATA 6Gbps Hot Swap Hard Drive	0C19520
ThinkServer 2.5" 300GB 10K SAS 6Gbps Hot Swap Hard Drive	67Y2619
ThinkServer 2.5" 600GB 10K SAS 6Gbps Hot Swap Hard Drive	67Y2621
ThinkServer 2.5" 900GB 10K SAS 6Gbps Hot Swap Hard Drive	0A89409
ThinkServer 2.5" 300GB 15K SAS 6Gbps Hot Swap Hard Drive	0C19494
ThinkServer 2.5" 500GB 7.2K Enterprise SATA 6Gbps Hot Swap Hard Drive	0C19495
Connectivity	
ThinkServer RAID 500 Adapter II	0A89464
ThinkServer RAID 500 Upgrade Key for Advanced RAID	0A89407
ThinkServer RAID 700 Adapter II	0A89463
ThinkServer RAID 700 Battery	67Y2647
Connectivity	_
ThinkServer 1Gbps Ethernet I350-T2 Server Adapter by Intel	0C19506
ThinkServer 1Gbps Ethernet I350-T4 Server Adapter by Intel	0C19507
Parallel/Serial Port Adapter ThinkServer Single Parallel Port PCI Adapter	0C19508
ThinkServer Single Serial Port PCI Adapter	0C19509
ThinkServer Dual Serial Port PCI Adatper	0C19510
ThinkServer Dual Serial Port PCIe Adatper	0C19511
Graphics ThinkServer 512MB NVS 300 PCIe x1 Graphic Adapter by NVIDIA	0C19528
3.5" Hard Drive Conversion Kit	
ThinkServer 3.5" HDD to 5.25" Tray Convertor Kit	0C19514
ThinkServer 3.5" HDD to 5.25" Tray Convertor with Slim ODD Kit	0C19529
Tower to Rack Shelf Conversion Kit	
ThinkServer Tower to Rack Shelf Conversion Kit	0C19515
Redundant Power Supply  Think Sorror 450W Cold List Swan Redundant Rower Swank	67//0605
ThinkServer 450W Gold Hot Swap Redundant Power Supply	67Y2625

For more information on server accessories, please visit: www.lenovo.com/support/accessories www.lenovo.com/support/thinkserveraccessories www.lenovo.com/support/security

Other accessories at www.lenovo.com/accessories

Accessories Guide pdf at www.lenovo.com/accessoriesguide

#### ThinkServer TD350 TopSeller Model(s) - 70DG (September 2014) - I

Type- model	Processor	Memory	RAID controller	Disk bays	Disk drives	Discrete ethernet	SD module	Optical	TPM	System mgmt	Power	Preloaded OS	Warranty (-year, on-site)
70DG0007UX	1xE5-2603 v3 6C/1.6GHz/15MB/85W/1600MHz	1x8GB 2133MHz RDIMM	110i+key	5x3.5" HS	Open	Opt	Opt	DVDRW	TPM	Opt	550Wx1	No	3
70DG0008UX	1xE5-2609 v3 6C/1.9GHz/15MB/85W/1600MHz	1x8GB 2133MHz RDIMM	110i+key	5x3.5" HS	Open	Opt	Opt	DVDRW	TPM	Opt	550Wx1	No	3
70DG0009UX	1xE5-2620 v3 6C/2.4GHz/15MB/85W/1866MHz	1x8GB 2133MHz RDIMM	720ix+1GB RAM	15x3.5" HS	Open	Opt	Opt	DVDRW	TPM	Opt	750Wx1 Platinum	No	3
70DG000AUX	1xE5-2640 v3 8C/2.6GHz/20MB/90W/1866MHz	1x8GB 2133MHz RDIMM	720ix+1GB RAM	15x3.5" HS	Open	Opt	Opt	DVDRW	TPM	Opt	750Wx1 Platinum	No	3

Components	Specification
•	Tower or 4U rack
Mechanical	Minimum configuration: 22 kg (48.5 lb), maximum: 41.4 kg (91.27 lb)
Dimensions (tower)	Height: 459 mm (18.1 in), width: 251 mm (9.9 in), depth: 686 mm (27 in)
Dimensions (rack)	Height: 173 mm (6.8 in), width: 482 mm (19 in), depth: 686 mm (27 in)
Chipset	Intel C612 Platform Controller Hub (PCH)
Processor	Up to two Intel Xeon E5-2600 v3 family processors with 16 cores up to 2.3GHz, 16 cores up to 2.3GHz, 14 cores up to 2.3GHz, 12 cores up to 2.6GHz, 10 cores up to 2.6GHz, 8 cores up to 3.2GHz, 6 cores up to 3.4GHz, 4 cores up to 3.5GHz. Two QPI link up to 9.6 GT/s. Up to 2133MHz memory speed. Up to 40MB cache.
Memory DIMMs	16 DIMM sockets (8 DIMMs per processor), 8-channel capable (4-channel per processor). RDIMM and LRDIMM (cannot be intermixed), DDR4, up to 2133MHz
Memory capacity	256GB (RDIMM, 16GB x 16)/512GB (LRDIMM, 32GB x 16)
Memory protection	ECC, memory mirroring, lockstep, and memory sparing
RAID support	RAID 0, 1, 10 with RAID 110i, 6Gb/s SATA, optional key for RAID 5. RAID 0, 1, 10 with RAID 510i, 6Gb/s SAS/SATA, optional key for RAID 5, 50. RAID 0, 1, 10, 5, 50, 6, 60 with RAID 720i or 720ix, 12Gb/s SAS/SATA, optional 1GB memory or 1GB/2GB/4GB flash with super capacitor RAID 0, 1, 10, 5, 50, 6, 60 with LSI 9286CV-8e, 6Gb/s SAS/SATA, 1GB memory, CacheVault flash cache with super capacitor, optional CacheCade Pro or FastPath upgrade key
Disk drive bays	3.5" bay up to 15, or 2.5" bay up to 32, hot-swap, or 5 3.5" easy-swap bays
Optical drive	Two 5.25" bays for optical drive. DVD-ROM or DVD±RW, Half-height or 9.5mm
Tape drive bays	Up to one LTO-6 internal SAS tape drive in 5.25" bay
Network interfaces	One dedicate management port, two gigabit ethernet ports. Supports optional discrete network adapters via PCIe slots
Ports	Front: Two USB 2.0.  Rear: One VGA, four USB 3.0, one RJ-45 (dedicate/share mgmt), two ethernet (RJ-45), one serial (9-pin)
Cooling	4 (3+1), hot-swap
Power supply	Up to two redundant hot-swap 450W ac or 550 W ac or 750 W ac or 1100 W ac power supplies. 550 W and 1100 W are 80 PLUS Platinum qualified, 750 W is 80 PLUS Platinum or Titanium qualified, 450 W is 80 PLUS Gold qualified
Graphics	Onboard Aspeed AST2400 with 16MB memory, one VGA on rear.  Maximum resolution: 1920x1200@60Hz
Hot-swap parts	Disk drives (hot-swap models), power supplies, and fans
Systems management	UEFI. Onboard Aspeed AST2400 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC). Control Panel LEDs shows the status of power, ID, network, system. Supports ThinkServer Diagnostics, ThinkServer Deployment Manager, ThinkServer Energy Manager, ThinkServer System Manager CLI, Lenovo ThinkServer Partner Pack for VMware vCenter and Microsoft System Center Operations Manager, ThinkServer Power Planner. Optional ThinkServer System Manager (TSM) Premium for for remote presence (graphics, keyboard and mouse, and virtual media)
Security features	Power-on and administrator password, optional Trusted Platform Module (TCG 1.2-compliant)

Components	Specification
Operating systems supported	Microsoft Windows Server 2012 R2/2012/2008 R2. Windows Small Business Server 2011. Red Hat Enterprise Linux 6.5/6.6/7. SUSE Linux Enterprise Server 11. VMware vSphere (ESXi) 5.1 P5/5.5 U2/6.0
Declared noise emissions	Operating: < 6.5 Bels, Idle: < 6 Bels (Maximum configuration)
Limited warranty	1-year or 3-year limited onsite service. For more information and services upgrade options, please see: http://www.lenovo.com/services_warranty/us/en/lenovo-warranty.html

Slot 3 Slot 2

Supports up to 7 PCle 3.0 x16 slots:

Slot 7 Slot 1: PCle 3.0 x16; full height, full length, by CPU 1, double-wide
Slot 6 Slot 2: PCle 3.0 x16 (x8 elec); full height, full length, by CPU 1
Slot 5 Slot 3: PCle 3.0 x16 (x8 elec); full height, full length, by CPU 1
Slot 4 Slot 4: PCle 3.0 x16 (x8 elec); full height, full length, by CPU 2
Slot 5: PCle 3.0 x16 (x8 elec); full height, full length, by CPU 2

Slot 6: PCle 3.0 x16 (x8 elec); full height, full length, by CPU 2 Slot 7: PCle 3.0 x16 (x8 elec); full height, full length, by CPU 2

#### **TD350 Environment Specification**

Supports ASHRAE Class A4, A3, or A2, depending on models.

ASHRAE Class	A4	A3	A2							
Temperature - operating	41 °F to 113 °F (5 °C to 45 °C)	41 °F to 104 °F (5 °C to 40 °C)	50 °F to 95 °F (10 °C to 35 °C)							
Temperature - storage (with package)	,	-40 °C to 60 °C								
Altitude - operating	A2: Operating temperature de-	ressurized): 0-10000ft (0-30 rated 1° C per 300m (1000ft) to 3 rated 1° C per 175m (575ft) to 30 rated 1° C per 125 (410ft) to 3000	000m (10000ft) above 900m 00m (10000ft) above 900m							
Humidity - operating (non-condensing)	8%~90% 8%~85% 20%~80%									
Humidity - storage (with package)	8%~90%, non-condensing									

Note:
ASHRAE Class A4: Easy-swap or 8x2.5" bay/Lenovo-qualified CPU; maximum of 120W thermal design power; not low-power type
(no L-suffix in the CPU name)/No internal tape/Two PSU installed for redundancy/Lenovo-qualified PCIe card;
power consumption of each card does not exceed 15W.
32 x 2.5" models support ASHRAE Class A2, the other models support ASHRAE Class A3.

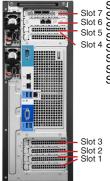
#### Core Options for ThinkServer TD350 (partial)

4X70F28590 ThinkServer 16GB DDR4-2133MHz (2Rx4) RDIMM
4XB0F28696 ThinkServer RAID 720i 1GB Modular Flash and Supercapacitor Upgrade
4X20F28576 ThinkServer Gen 5 750W Titanium Hot Swap Power Supply
4XF0G45867 ThinkServer System Manager Premium (TSM Premium)
4XF0G45870 ThinkServer TD350 4-Post Static Rack Kit

Type- model	Processor	Memory	RAID controller	Disk bays	Disk drives	Discrete ethernet	SD module	Optical	ТРМ	System mgmt	Power	Preloaded OS	Warranty (-year, on-site)
	1xE5-2650 v3 10C/2.3GHz/25MB/105W/2133MHz	1x8GB 2133MHz RDIMM	720ix+1GB RAM	15x3.5" HS	Open	Opt	Opt	DVDRW	TPM	Opt	750Wx1 Platinum	No	3
	1xE5-2670 v3 12C/2.3GHz/30MB/120W/2133MHz	1x8GB 2133MHz RDIMM	720ix+1GB RAM	15x3.5" HS	Open	Opt	Opt	DVDRW	TPM	Opt	750Wx1 Platinum	No	3

Components	Specification
Mechanical	• Tower or 4U rack
Dimensions (tower)	Minimum configuration: 22 kg (48.5 lb), maximum: 41.4 kg (91.27 lb)
Dimensions (tower)	Height: 459 mm (18.1 in), width: 251 mm (9.9 in), depth: 686 mm (27 in)
Dimensions (rack)	Height: 173 mm (6.8 in), width: 482 mm (19 in), depth: 686 mm (27 in)
Chipset	Intel C612 Platform Controller Hub (PCH)
Processor	Up to two Intel Xeon E5-2600 v3 family processors with 16 cores up to 2.3GHz, 16 cores up to 2.3GHz, 14 cores up to 2.3GHz, 12 cores up to 2.6GHz, 10 cores up to 2.6GHz, 8 cores up to 3.2GHz, 6 cores up to 3.4GHz, 4 cores up to 3.5GHz. Two QPI link up to 9.6 GT/s. Up to 2133MHz memory speed. Up to 40MB cache.
Memory DIMMs	16 DIMM sockets (8 DIMMs per processor), 8-channel capable (4-channel per processor). RDIMM and LRDIMM (cannot be intermixed), DDR4, up to 2133MHz
Memory capacity	256GB (RDIMM, 16GB x 16)/512GB (LRDIMM, 32GB x 16)
Memory protection	ECC, memory mirroring, lockstep, and memory sparing
RAID support	RAID 0, 1, 10 with RAID 110i, 6Gb/s SATA, optional key for RAID 5. RAID 0, 1, 10 with RAID 510i, 6Gb/s SAS/SATA, optional key for RAID 5, 50. RAID 0, 1, 10, 5, 50, 6, 60 with RAID 720i or 720ix, 12Gb/s SAS/SATA, optional 1GB memory or 1GB/2GB/4GB flash with super capacitor RAID 0, 1, 10, 5, 50, 6, 60 with LSI 9286CV-8e, 6Gb/s SAS/SATA, 1GB memory, CacheVault flash cache with super capacitor, optional CacheCade Pro or FastPath upgrade key
Disk drive bays	3.5" bay up to 15, or 2.5" bay up to 32, hot-swap, or 5 3.5" easy-swap bays
Optical drive	Two 5.25" bays for optical drive. DVD-ROM or DVD±RW, Half-height or 9.5mm
Tape drive bays	Up to one LTO-6 internal SAS tape drive in 5.25" bay
Network interfaces	One dedicate management port, two gigabit ethernet ports. Supports optional discrete network adapters via PCIe slots
Ports	Front: Two USB 2.0. Rear: One VGA, four USB 3.0, one RJ-45 (dedicate/share mgmt), two ethernet (RJ-45), one serial (9-pin)
Cooling	4 (3+1), hot-swap
Power supply	Up to two redundant hot-swap 450W ac or 550 W ac or 750 W ac or 1100 W ac power supplies. 550 W and 1100 W are 80 PLUS Platinum qualified, 750 W is 80 PLUS Platinum or Titanium qualified, 450 W is 80 PLUS Gold qualified
Graphics	Onboard Aspeed AST2400 with 16MB memory, one VGA on rear. Maximum resolution: 1920x1200@60Hz
Hot-swap parts	Disk drives (hot-swap models), power supplies, and fans
Systems management	UEFI. Onboard Aspeed AST2400 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC). Control Panel LEDs shows the status of power, ID, network, system. Supports ThinkServer Diagnostics, ThinkServer Deployment Manager, ThinkServer Energy Manager, ThinkServer System Manager CLI, Lenovo ThinkServer Partner Pack for VMware vCenter and Microsoft System Center Operations Manager, ThinkServer Power Planner. Optional ThinkServer System Manager (TSM) Premium for for remote presence (graphics, keyboard and mouse, and virtual media)
Security features	Power-on and administrator password, optional Trusted Platform Module (TCG 1.2-compliant)

Components	Specification
Operating systems	Microsoft Windows Server 2012 R2/2012/2008 R2. Windows Small Business Server 2011. Red Hat Enterprise Linux 6.5/6.6/7. SUSE Linux Enterprise Server 11. VMware vSphere (ESXi) 5.1 P5/5.5 U2/6.0
Declared noise emissions	Operating: < 6.5 Bels, Idle: < 6 Bels (Maximum configuration)
Limited warranty	1-year or 3-year limited onsite service. For more information and services upgrade options, please see: http://www.lenovo.com/services_warranty/us/en/lenovo-warranty.html



Supports up to 7 PCle 3.0 x16 slots:

Slot 7 Slot 1: PCle 3.0 x16; full height, full length, by CPU 1, double-wide
Slot 6 Slot 2: PCle 3.0 x16 (x8 elec); full height, full length, by CPU 1
Slot 5 Slot 3: PCle 3.0 x16 (x8 elec); full height, full length, by CPU 1
Slot 4 Slot 4: PCle 3.0 x16 (x8 elec); full height, full length, by CPU 2
Slot 5: PCle 3.0 x16 (x8 elec); full height, full length, by CPU 2

Slot 6: PCle 3.0 x16 (x8 elec); full height, full length, by CPU 2 Slot 7: PCle 3.0 x16 (x8 elec); full height, full length, by CPU 2

#### **TD350 Environment Specification**

Supports ASHRAE Class A4, A3, or A2, depending on models.

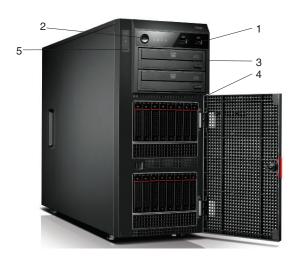
Cupporto / tor ii ii te Oit	400 / 11, / 10, 01 / 12, dopo	maning on modelo.										
ASHRAE Class	A4	A3	A2									
Temperature - operating	41 °F to 113 °F (5 °C to 45 °C)	41 °F to 104 °F (5 °C to 40 °C)	50 °F to 95 °F (10 °C to 35 °C)									
Temperature - storage (with package)		-40 °C to 60 °C										
Altitude - operating	A2: Operating temperature de- A3: Operating temperature de-	ressurized): 0-10000ft (0-30 rated 1° C per 300m (1000ft) to 3 rated 1° C per 175m (575ft) to 30 rated 1° C per 125 (410ft) to 3000	000m (10000ft) above 900m 00m (10000ft) above 900m									
A4: Operating temperature de-rated 1° C per 125 (410ft) to 3000m (10000ft) above 900m												
Humidity - storage (with package)		8%~90%, non-condensing										

Note:
ASHRAE Class A4: Easy-swap or 8x2.5" bay/Lenovo-qualified CPU; maximum of 120W thermal design power; not low-power type
(no L-suffix in the CPU name)/No internal tape/Two PSU installed for redundancy/Lenovo-qualified PCIe card;
power consumption of each card does not exceed 15W.
32 x 2.5" models support ASHRAE Class A2, the other models support ASHRAE Class A3.

#### Core Options for ThinkServer TD350 (partial)

4X70F28590 ThinkServer 16GB DDR4-2133MHz (2Rx4) RDIMM 4XB0F28696 ThinkServer RAID 720i 1GB Modular Flash and Supercapacitor Upgrade 4X20F28576 ThinkServer Gen 5 750W Titanium Hot Swap Power Supply 4XF0G45867 ThinkServer System Manager Premium (TSM Premium)
4XF0G45870 ThinkServer TD350 4-Post Static Rack Kit

#### ThinkServer TD340 Overview



#### Front view

- 1. Front I/O: 2 USB 2.0
- Power Button 2.
- 3. Two 5.25" optical drive bays4. 16 x 2.5" hot-swap drive bays (on selected models, also supports one of the following: 4 x 3.5" direct cable bays, or 4 x 3.5" hot-swap bays, or 8 x 3.5" hot-swap bays, or 8 x 2.5" hot-swap bays, 5. Intelligent Diagnostics Module (optional)



#### Rear view

- Hot-swap power supplies, 800W, 80 PLUS Gold (on selected models, also supports one fixed power supply, 625W, 80 PLUS Bronze)
   Rear I/O: 4 USB 2.0
- - 1 Serial (9-pin) 2 RJ-45 (one for dedicate/share management)
  - 1 VGA
- 8. Expansion slots\*:
  - 1 PCle 3.0 x8 (near rear I/O, 2nd CPU is needed)

  - 1 PCle 3.0 x16 1 PCle 3.0 x8 (2nd CPU is needed) 1 PCle 3.0 x8 (2nd CPU is needed) 1 PCle 3.0 x8 (x4 elec)
  - 1 PCI
  - \* Add-on ethernet adapter, RAID adapter, and graphics adapter are optional

#### Internal

- Two LGA1356 sockets, supports up to two processors from Intel Xeon E5-2400 v2 and E5-2400 families 12 DIMM sockets, supports up to 192GB ECC LV RDIMM or 48GB ECC LV UDIMM memory Up to 16 x 2.5" hard drive bays

#### Mechanical

- Tower, business black color, metal case
- Rack-mountable to 5U
- W x H (without foot) x D = 7.68"/195mm x 16.9"/430mm x 23.4"/595mm
- 57.32 lb (26kg) max configuration

Type- model	Intel Xeon Processor	2nd CPU	Memory	Disk Bays	RAID controller	Storage	Optical	Discrete I	Intelligent Diagnostics (IDM)	ThinkServer Management Module Premium (Premium)		Discrete Graphics		Preloaded OS	Power Supply	Warranty (-year, on-site)
70B7002GUX	(Xeon E5-2403 v2 4C/1.8GHz/10MB/1333MHz	No	8GBx1 1600MHz LVRDIMM	4x3.5" HS (SATA/SAS)	RAID300	Open	DVD±RW	No	No	No	No	No	TPM	No	1x800W Redundant	1
70B7002HUX	Xeon E5-2407 v2 4C/2.4GHz/10MB/1333MHz	No	8GBx1 1600MHz LVRDIMM	4x3.5" HS (SATA/SAS)	RAID300	Open	DVD±RW	No	No	No	No	No	TPM	No	1x800W Redundant	1
70B7002JUX	Xeon E5-2403 v2 4C/1.8GHz/10MB/1333MHz	No	8GBx1 1600MHz LVRDIMM	4x3.5" HS (SATA/SAS)	RAID300	Open	DVD±RW	No	IDM	No	No	No	TPM	No	1x800W Redundant	3
70B7002KUX	Xeon E5-2407 v2 4C/2.4GHz/10MB/1333MHz	No	8GBx1 1600MHz LVRDIMM	4x3.5" HS (SATA/SAS)	RAID300	Open	DVD±RW	No	IDM	No	No	No	TPM	No	1x800W Redundant	3
70B7002LUX	Xeon E5-2420 v2 6C/2.2GHz/15MB/1600MHz	No	8GBx1 1600MHz LVRDIMM	4x3.5" HS (SATA/SAS)	RAID300	Open	DVD±RW	No	IDM	No	No	No	TPM	No	1x800W Redundant	3
	(Xeon E5-2430 v2 6C/2.5GHz/15MB/1600MHz	No	8GBx1 1600MHz LVRDIMM	4x3.5" HS (SATA/SAS)	RAID300	Open	DVD±RW	No	IDM	No	No	No	TPM	No	1x800W Redundant	3
70B7002NUX	Xeon E5-2440 v2 8C/1.9GHz/20MB/1600MHz	No	8GBx1 1600MHz LVRDIMM	4x3.5" HS (SATA/SAS)	RAID300	Open	DVD±RW	No	IDM	No	No	No	TPM	No	1x800W Redundant	3

- For detailed platform specifications, please see <u>ThinkServer TD340 Platform Specifications</u> sheets
   For optional configurations of ThinkServer TD340, please see <u>ThinkServer TD340 Optional Configurations</u> sheets
   For ThinkServer TD340 operating system and virtualization supportability, please see <u>ThinkServer TD340 Operating System and Virtualization Supportability Matrix</u> sheets
   For Lenovo services upgrade options for ThinkServer TD340, please see <u>ThinkServer TD340 Services Upgrade Options</u> sheets

Chipset Memory DIMMs		Environmental certifications	<ul> <li>Energy Star Server 2.0 qualified for models with 800 watts hot-swap PSU</li> <li>Energy Star Server 1.1 qualified for models with 625 watts fixed PSU</li> <li>RoHS-compliant</li> </ul>
Memory capacity	or up to 48GB DDR3 LV UDIMM (4GB x 12)	Front	Mechanical
Memory protection	ECC, memory mirroring, memory sparing  Supports one of the following, depending on models: RAID 100: RAID 0, 1, 10 standard, optional upgrade key for RAID 5 RAID 300: RAID 0, 1, 10 standard, optional upgrade key for RAID 5 RAID 500: RAID 0, 1, 10 standard, optional upgrade key for RAID 5, 50	opt optical	<ul> <li>Tower, rack-mountable to 5U via optional conversion kit (Conversion kit is not included in model)</li> <li>7.68" W x 23.4" D x 16.9" H (without foot)</li> <li>195mm W x 595mm D x 430mm H (without foot)</li> <li>57.3 lb (26kg) max configuration</li> </ul>
RAID support	RAID 700: RAID 0, 1, 10, 5, 50, 6, 60 standard, 512MB cache, optional intelligent Battery Backup Unit RAID 710: RAID 0, 1, 10, 5, 50, 6, 60 standard, 1GB cache, optional CacheVault flash cache with super capacitor/CacheCade Pro 2.0/FastPath key *RAID 50, 60 are functional on 8 or 16 disk bay models only, RAID100 supports SATA drives only	Disk Bay area 2	Disk bay Configurations Supports one of the following, depending on models:  • 4 x 3.5" non-hot swap SATA disk bays (uses Disk bay area 1)  • 4 x 3.5" hot-swap SATA/SAS disk bays (uses Disk bay area 1)  • 8 x 3.5" hot-swap SATA/SAS disk bays (uses Disk bay area 1 and 2)
Optical drive (optional)	Supports two half-height 5.25" optical bays, up to two optical drives	Disk Bay area 1	• 8 x 2.5" hot-swap SATA/SAS disk bays (uses Disk bay area 1)
Onboard network	Two Gigabit Ethernet port via two Intel 82574L, either port can work as dedicate/share management (via BIOS setting)	alea I	• 16 x 2.5" hot-swap SATA/SAS disk bays (uses Disk bay area 1 and 2)  Expansion Slots
Discrete network (optional)	Supports the following Intel Server Adapter options on selected models: 1Gbps: 350-T2/I350-T4 10Gbps: X520-SR2/X520-DA2/X540-T2/Fiber Module for X520-DA2	Rear***	Up to six expansion slots**: Slot 1: half-length, full-height, 32-bit PCI 2.3 Slot 2: half-length, full-height, PCIe 3.0 x8 (x4 elec)
Intelligent Diagnostics Module (optional)	Supports optional Intelligent Diagnostics Module (IDM) on selected models, IDM LED lights indicate failing component category	PSUPSU	Slot 3: half-length, full-height, PCle 3.0 x8 Slot 4: half-length, full-height, PCle 3.0 x8 Slot 5: half-length, full-height, PCle 3.0 x16
Systems management (TMM Premium is optional)	Onboard Aspeed AST2300 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC); optional ThinkServer Management Module Premium for iKVM functions     Front control panel LEDs shows the status of power, hard drive activity, network, system     ThinkServer EasyStartup/EasyManage/EasyUpdate	6 - PCle x8 5 - PCle x16	Slot 6: half-length, full-height, PCIe 3.0 x8 (near CPU)  ** Single processor models: Slot 1, 2, 5 are functional Dual processor models: All six slot are functional  Ports  Front ports: Two USB 2.0
Power supply	Supports one of the follwing, depending on models:  One fixed 625 watts, universal, 80 PLUS Bronze qualified  Up to two redundant 800 watts, two maximum, rear access, hot-swap, 80 PLUS Gold qualified, redundant with two power supplies	4 - PCle x8 3 - PCle x8 2 - PCle x8 1 - PCl	Rear ports: Four USB 2.0, one serial (9-pin), two ethernet (RJ-45, one for dedicate/share mgmt), one analog VGA DB-15 connector Internal USB: One internal USB port (Type A)
Security features (TPM is optional)	Power-on password/administrator password, Trusted Platform Module (TCG 1.2-compliant) on selected models	*** Some models:	one 625W fixed power supply

Type- model	Intel Xeon Processor	2nd CPU	Memory	Disk Bays	RAID controller	Storage	Optical	Discrete ethernet	Intelligent Diagnostics (IDM)	ThinkServer Management Module Premium (Premium)		Discrete Graphics	1	Preloaded OS	Power Supply	Warranty (-year, on-site)
	Xeon E5-2450 v2 8C/2.5GHz/20MB/1600MHz	No	8GBx1 1600MHz LVRDIMM	4x3.5" HS (SATA/SAS)	RAID300	Open	DVD±RW	No	IDM	No	No	No	ТРМ	No	1x800W Redundant	3
70B7002QUX	Xeon E5-2470 v2 10C/2.4GHz/25MB/1600MHz	No	8GBx1 1600MHz LVRDIMM	4x3.5" HS (SATA/SAS)	RAID300	Open	DVD±RW	No	IDM	No	No	No	TPM	No	1x800W Redundant	3
	Xeon E5-2420 v2 6C/2.2GHz/15MB/1600MHz	No	8GBx1 1600MHz LVRDIMM	8x3.5" HS (SATA/SAS)	RAID300	Open	DVD±RW	No	IDM	No	No	No	TPM	No	1x800W Redundant	3
	Xeon E5-2430 v2 6C/2.5GHz/15MB/1600MHz	No	8GBx1 1600MHz LVRDIMM	8x3.5" HS (SATA/SAS)	RAID300	Open	DVD±RW	No	IDM	No	No	No	TPM	No	1x800W Redundant	3
	Xeon E5-2440 v2 8C/1.9GHz/20MB/1600MHz	No	8GBx1 1600MHz LVRDIMM	8x3.5" HS (SATA/SAS)	RAID300	Open	DVD±RW	No	IDM	No	No	No	TPM	No	1x800W Redundant	3
	Xeon E5-2450 v2 8C/2.5GHz/20MB/1600MHz	No	8GBx1 1600MHz LVRDIMM	8x3.5" HS (SATA/SAS)	RAID300	Open	DVD±RW	No	IDM	No	No	No	TPM	No	1x800W Redundant	3
70B7002VUX	Xeon E5-2470 v2 10C/2.4GHz/25MB/1600MHz	No	8GBx1 1600MHz LVRDIMM	8x3.5" HS (SATA/SAS)	RAID300	Open	DVD±RW	No	IDM	No	No	No	ТРМ	No	1x800W Redundant	3

For detailed platform specifications, please see <u>ThinkServer TD340 Platform Specifications</u> sheets
 For optional configurations of ThinkServer TD340, please see <u>ThinkServer TD340 Optional Configurations</u> sheets
 For ThinkServer TD340 operating system and virtualization supportability, please see <u>ThinkServer TD340 Operating System and Virtualization Supportability Matrix</u> sheets
 For Lenovo services upgrade options for ThinkServer TD340, please see <u>ThinkServer TD340 Services Upgrade Options</u> sheets

Chipset Memory DIMMs	Intel C606 Chipset, two LGA1356 sockets for processors Twelve DIMM sockets, six DIMM sockets per processor	Environmental certifications	<ul> <li>Energy Star Server 2.0 qualified for models with 800 watts hot-swap PSU</li> <li>Energy Star Server 1.1 qualified for models with 625 watts fixed PSU</li> <li>RoHS-compliant</li> </ul>
Memory capacity	Up to <b>192GB</b> DDR3 LV RDIMM (16GB x 12), or up to <b>48GB</b> DDR3 LV UDIMM (4GB x 12)	Front	Mechanical
Memory protection	ECC, memory mirroring, memory sparing  Supports one of the following, depending on models: RAID 100: RAID 0, 1, 10 standard, optional upgrade key for RAID 5 RAID 300: RAID 0, 1, 10 standard, optional upgrade key for RAID 5 RAID 500: RAID 0, 1, 10 standard, optional upgrade key for RAID 5, 50 RAID 700: RAID 0, 1, 10, 5, 50, 6, 60 standard, 512MB cache, optional intelligent Battery Backup Unit RAID 710: RAID 0, 1, 10, 5, 50, 6, 60 standard, 1GB cache, optional CacheVault flash cache with super capacitor/CacheCade Pro 2.0/FastPath key *RAID 50, 60 are functional on 8 or 16 disk bay models only, RAID100 supports SATA drives only	opt optical std optical	Tower, rack-mountable to 5U via optional conversion kit (Conversion kit is not included in model)  7.68" W x 23.4" D x 16.9" H (without foot)  195mm W x 595mm D x 430mm H (without foot)  57.3 lb (26kg) max configuration  Disk bay Configurations  Supports one of the following, depending on models:  4 x 3.5" non-hot swap SATA disk bays (uses Disk bay area 1)  4 x 3.5" hot-swap SATA/SAS disk bays (uses Disk bay area 1)
Optical drive (optional) Onboard network	Supports two half-height 5.25" optical bays, up to two optical drives Two Gigabit Ethernet port via two Intel 82574L, either port can work as dedicate/share management (via BIOS setting)	Disk Bay area 1	8 x 3.5" hot-swap SATA/SAS disk bays (uses Disk bay area 1 and 2)     8 x 2.5" hot-swap SATA/SAS disk bays (uses Disk bay area 1)     16 x 2.5" hot-swap SATA/SAS disk bays (uses Disk bay area 1 and 2)  Expansion Slots
Discrete network (optional)	Supports the following Intel Server Adapter options on selected models: 1Gbps: 350-T2/I350-T4 10Gbps: X520-SR2/X520-DA2/X540-T2/Fiber Module for X520-DA2	Rear***	Up to six expansion slots**: Slot 1: half-length, full-height, 32-bit PCI 2.3 Slot 2: half-length, full-height, PCIe 3.0 x8 (x4 elec) Slot 3: half-length, full-height, PCIe 3.0 x8
Intelligent Diagnostics Module (optional)	Supports optional Intelligent Diagnostics Module (IDM) on selected models, IDM LED lights indicate failing component category		Slot 3: half-length, full-height, PCle 3.0 x8 Slot 5: half-length, full-height, PCle 3.0 x8
Systems management (TMM Premium is optional)	Onboard Aspeed AST2300 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC); optional ThinkServer Management Module Premium for iKVM functions     Front control panel LEDs shows the status of power, hard drive activity, network, system     ThinkServer EasyStartup/EasyManage/EasyUpdate	6 - PCle x8 5 - PCle x16	Slot 6: half-length, full-height, PCle 3.0 x8 (near CPU)  "Single processor models: Slot 1, 2, 5 are functional Dual processor models: All six slot are functional  Ports  Front ports: Two USB 2.0 Rear ports: Four USB 2.0, one serial (9-pin),
Power supply	Supports one of the follwing, depending on models:  One fixed 625 watts, universal, 80 PLUS Bronze qualified  Up to two redundant 800 watts, two maximum, rear access, hot-swap, 80 PLUS Gold qualified, redundant with two power supplies	4 - PCle x8 3 - PCle x8 2 - PCle x8 1 - PCl	two ethernet (RJ-45, one for dedicate/share mgmt), one analog VGA DB-15 connector  Internal USB: One internal USB port (Type A)
Security features (TPM is optional)	Power-on password/administrator password, Trusted Platform Module (TCG 1.2-compliant) on selected models	*** Some models	s: one 625W fixed power supply

Type- model	Intel Xeon Processor	2nd CPU	Memory	Disk Bays	RAID controller	Storage	Optical	Discrete ethernet	Intelligent Diagnostics (IDM)	ThinkServer Management Module Premium (Premium)		Discrete Graphics		Preloaded OS	Power Supply	Warranty (-year, on-site)
70B7002WUX	Xeon E5-2420 v2 6C/2.2GHz/15MB/1600MHz	No	8GBx1 1600MHz LVRDIMM	8x2.5" HS (SATA/SAS)	RAID300	Open	DVD±RW	No	IDM	No	No	No	TPM	No	1x800W Redundant	3
70B7002XUX	Xeon E5-2430 v2 6C/2.5GHz/15MB/1600MHz	No	8GBx1 1600MHz LVRDIMM	8x2.5" HS (SATA/SAS)	RAID300	Open	DVD±RW	No	IDM	No	No	No	TPM	No	1x800W Redundant	3
	Xeon E5-2440 v2 8C/1.9GHz/20MB/1600MHz	No	8GBx1 1600MHz LVRDIMM	8x2.5" HS (SATA/SAS)	RAID300	Open	DVD±RW	No	IDM	No	No	No	TPM	No	1x800W Redundant	3
	Xeon E5-2450 v2 8C/2.5GHz/20MB/1600MHz	No	8GBx1 1600MHz LVRDIMM	8x2.5" HS (SATA/SAS)	RAID300	Open	DVD±RW	No	IDM	No	No	No	TPM	No	1x800W Redundant	3
70B70031UX	Xeon E5-2470 v2 10C/2.4GHz/25MB/1600MHz	No	8GBx1 1600MHz LVRDIMM	8x2.5" HS (SATA/SAS)	RAID300	Open	DVD±RW	No	IDM	No	No	No	TPM	No	1x800W Redundant	3
	Xeon E5-2420 v2 6C/2.2GHz/15MB/1600MHz	No	8GBx1 1600MHz LVRDIMM	16x2.5" HS (SATA/SAS)	RAID700	Open	DVD±RW	No	IDM	No	No	No	TPM	No	1x800W Redundant	3
70B70033UX	Xeon E5-2430 v2 6C/2.5GHz/15MB/1600MHz	No	8GBx1 1600MHz LVRDIMM	16x2.5" HS (SATA/SAS)	RAID700	Open	DVD±RW	No	IDM	No	No	No	TPM	No	1x800W Redundant	3

- For detailed platform specifications, please see <u>ThinkServer TD340 Platform Specifications</u> sheets
   For optional configurations of ThinkServer TD340, please see <u>ThinkServer TD340 Optional Configurations</u> sheets
   For ThinkServer TD340 operating system and virtualization supportability, please see <u>ThinkServer TD340 Operating System and Virtualization Supportability Matrix</u> sheets
   For Lenovo services upgrade options for ThinkServer TD340, please see <u>ThinkServer TD340 Services Upgrade Options</u> sheets

Chipset Memory DIMMs	Intel C606 Chipset, two LGA1356 sockets for processors Twelve DIMM sockets, six DIMM sockets per processor Up to 192GB DDR3 LV RDIMM (16GB x 12),	Environmental certifications	<ul> <li>Energy Star Server 2.0 qualified for models with 800 watts hot-swap PSU</li> <li>Energy Star Server 1.1 qualified for models with 625 watts fixed PSU</li> <li>RoHS-compliant</li> </ul>
Memory capacity	or up to <b>48GB</b> DDR3 LV UDIMM (4GB x 12)	Front	Mechanical
Memory protection  RAID support	ECC, memory mirroring, memory sparing  Supports one of the following, depending on models: RAID 100: RAID 0, 1, 10 standard, optional upgrade key for RAID 5 RAID 300: RAID 0, 1, 10 standard, optional upgrade key for RAID 5 RAID 500: RAID 0, 1, 10 standard, optional upgrade key for RAID 5, 50 RAID 700: RAID 0, 1, 10, 5, 50, 6, 60 standard, 512MB cache, optional intelligent Battery Backup Unit RAID 710: RAID 0, 1, 10, 5, 50, 6, 60 standard, 1GB cache, optional CacheVault flash cache with super capacitor/CacheCade Pro 2.0/FastPath key	opt optical std optical	Tower, rack-mountable to 5U via optional conversion kit (Conversion kit is not included in model)  7.68" W x 23.4" D x 16.9" H (without foot) 195mm W x 595mm D x 430mm H (without foot) 57.3 lb (26kg) max configuration  Disk bay Configurations  Supports one of the following, depending on models: 4 x 3.5" non-hot swap SATA disk bays (uses Disk bay area 1) 4 x 3.5" hot-swap SATA/SAS disk bays (uses Disk bay area 1)
Optical drive (optiona Onboard network	*RAID 50, 60 are functional on 8 or 16 disk bay models only, RAID100 supports SATA drives only  Supports two half-height 5.25" optical bays, up to two optical drives  Two Gigabit Ethernet port via two Intel 82574L,	Disk Bay area 1	<ul> <li>8 x 3.5" hot-swap SATA/SAS disk bays (uses Disk bay area 1 and 2)</li> <li>8 x 2.5" hot-swap SATA/SAS disk bays (uses Disk bay area 1)</li> <li>16 x 2.5" hot-swap SATA/SAS disk bays (uses Disk bay area 1 and 2)</li> </ul>
Discrete network (optional)	either port can work as dedicate/share management (via BIOS setting)  Supports the following Intel Server Adapter options on selected models: 1Gbps: 350-T2/l350-T4 10Gbps: X520-SR2/X520-DA2/X540-T2/Fiber Module for X520-DA2	Rear***	Up to six expansion slots**: Slot 1: half-length, full-height, 32-bit PCI 2.3 Slot 2: half-length, full-height, PCIe 3.0 x8 (x4 elec)
Intelligent Diagnostics Module (optional)	s Supports optional Intelligent Diagnostics Module (IDM) on selected models, IDM LED lights indicate failing component category	PSU PSU	Slot 3: half-length, full-height, PCle 3.0 x8 Slot 4: half-length, full-height, PCle 3.0 x8 Slot 5: half-length, full-height, PCle 3.0 x16
Systems management (TMM Premium is optional)	Onboard Aspeed AST2300 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC); optional ThinkServer Management Module Premium for iKVM functions Front control panel LEDs shows the status of power, hard drive activity, network, system ThinkServer EasyStartup/EasyManage/EasyUpdate	6 - PCle x8 5 - PCle x16	Slot 6: half-length, full-height, PCle 3.0 x8 (near CPU)  ** Single processor models: Slot 1, 2, 5 are functional  Dual processor models: All six slot are functional  Ports  Front ports: Two USB 2.0  Rear ports: Four USB 2.0, one serial (9-pin),
Power supply	Supports one of the follwing, depending on models:  One fixed 625 watts, universal, 80 PLUS Bronze qualified  Up to two redundant 800 watts, two maximum, rear access, hot-swap, 80 PLUS Gold qualified, redundant with two power supplies	4 - PCle x8 3 - PCle x8 2 - PCle x8 1 - PCl	two ethernet (RJ-45, one for dedicate/share mgmt), one analog VGA DB-15 connector Internal USB: One internal USB port (Type A)
Security features (TPM is optional)	Power-on password/administrator password, Trusted Platform Module (TCG 1.2-compliant) on selected models	*** Some models	: one 625W fixed power supply

Type- model	Intel Xeon Processor	2nd CPU		Disk Bays	RAID controller	Storage		Discrete ethernet	Intelligent Diagnostics (IDM)	ThinkServer Management Module Premium (Premium)		Discrete Graphics		Preloaded OS		Warranty (-year, on-site)
70B70034UX	Xeon E5-2440 v2 8C/1.9GHz/20MB/1600MHz	No	8GBx1 1600MHz LVRDIMM	16x2.5" HS (SATA/SAS)		Open	DVD±RW	No	IDM	No	No	No	TPM	No	1x800W Redundant	3
70B70035UX	Xeon E5-2450 v2 8C/2.5GHz/20MB/1600MHz	No	8GBx1 1600MHz LVRDIMM	16x2.5" HS (SATA/SAS)	RAID710	Open	DVD±RW	No	IDM	No	No	No	ТРМ	No	1x800W Redundant	3
70B70036UX	Xeon E5-2470 v2 10C/2.4GHz/25MB/1600MHz	No	8GBx1 1600MHz LVRDIMM	16x2.5" HS (SATA/SAS)	RAID710	Open	DVD±RW	No	IDM	No	No	No	TPM	No	1x800W Redundant	3

- For detailed platform specifications, please see <u>ThinkServer TD340 Platform Specifications</u> sheets
   For optional configurations of ThinkServer TD340, please see <u>ThinkServer TD340 Optional Configurations</u> sheets
   For ThinkServer TD340 operating system and virtualization supportability, please see <u>ThinkServer TD340 Operating System and Virtualization Supportability Matrix</u> sheets
   For Lenovo services upgrade options for ThinkServer TD340, please see <u>ThinkServer TD340 Services Upgrade Options</u> sheets

Chipset	Intel C606 Chipset, two LGA1356 sockets for processors	Environmental	<ul> <li>Energy Star Server 2.0 qualified for models with 800 watts hot-swap PSU</li> </ul>
Memory DIMMs	I welve DIMM sockets, six DIMM sockets per processor	certifications	<ul> <li>Energy Star Server 1.1 qualified for models with 625 watts fixed PSU</li> </ul>
Memory capacity	Up to <b>192GB</b> DDR3 LV RDIMM (16GB x 12), or up to <b>48GB</b> DDR3 LV UDIMM (4GB x 12)	Front	RoHS-compliant     Mechanical
Memory protection	ECC, memory mirroring, memory sparing		Tower, rack-mountable to 5U via optional conversion kit
RAID support	Supports one of the following, depending on models: RAID 100: RAID 0, 1, 10 standard, optional upgrade key for RAID 5 RAID 300: RAID 0, 1, 10 standard, optional upgrade key for RAID 5 RAID 500: RAID 0, 1, 10 standard, optional upgrade key for RAID 5, 50 RAID 700: RAID 0, 1, 10, 5, 50, 6, 60 standard, 512MB cache, optional intelligent Battery Backup Unit RAID 710: RAID 0, 1, 10, 5, 50, 6, 60 standard, 1GB cache, optional CacheVault flash cache with super capacitor/CacheCade Pro 2.0/FastPath key **RAID 50, 60 are functional on 8 or 16 disk bay models only, RAID100 supports SATA drives only	opt optical std optical  Disk Bay area 2	(Conversion kit is not included in model)  7.68" W x 23.4" D x 16.9" H (without foot)  195mm W x 595mm D x 430mm H (without foot)  57.3 lb (26kg) max configuration  Disk bay Configurations  Supports one of the following, depending on models:  4 x 3.5" non-hot swap SATA disk bays (uses Disk bay area 1)  4 x 3.5" hot-swap SATA/SAS disk bays (uses Disk bay area 1)  8 x 3.5" hot-swap SATA/SAS disk bays (uses Disk bay area 1)
Optical drive (optional	Supports two half-height 5.25" optical bays, up to two optical drives	Disk Bay	• 8 x 2.5" hot-swap SATA/SAS disk bays (uses Disk bay area 1)
Onboard network	Two Gigabit Ethernet port via two Intel 82574L, either port can work as dedicate/share management (via BIOS setting)	area 1	• 16 x 2.5" hot-swap SATA/SAS disk bays (uses Disk bay area 1 and 2)  Expansion Slots  Up to six expansion slots**: Slot 1: half-length, full-height, 32-bit PCI 2.3 Slot 2: half-length, full-height, PCIe 3.0 x8 (x4 elec) Slot 3: half-length, full-height, PCIe 3.0 x8 Slot 4: half-length, full-height, PCIe 3.0 x8 Slot 5: half-length, full-height, PCIe 3.0 x16 Slot 6: half-length, full-height, PCIe 3.0 x8 (near CPU)  *** Single processor models: Slot 1, 2, 5 are functional Dual processor models: All six slot are functional  Ports  Front ports: Two USB 2.0  Poets parts: Four LISP 2.0 are special (0 pin)
Discrete network (optional)	Supports the following Intel Server Adapter options on selected models: 1Gbps: 350-T2/l350-T4 10Gbps: X520-SR2/X520-DA2/X540-T2/Fiber Module for X520-DA2	Rear***	
Intelligent Diagnostics Module (optional)	S Supports optional Intelligent Diagnostics Module (IDM) on selected models, IDM LED lights indicate failing component category	PS0[PS0]	
Systems management (TMM Premium is optional)	Onboard Aspeed AST2300 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC); optional ThinkServer Management Module Premium for iKVM functions Front control panel LEDs shows the status of power, hard drive activity, network, system ThinkServer EasyStartup/EasyManage/EasyUpdate	6 - PCle x8	
Power supply	Supports one of the follwing, depending on models:  One fixed 625 watts, universal, 80 PLUS Bronze qualified  Up to two redundant 800 watts, two maximum, rear access, hot-swap, 80 PLUS Gold qualified, redundant with two power supplies	5 - PCle x16 4 - PCle x8 3 - PCle x8 2 - PCle x8 1 - PCl	Rear ports: Four USB 2.0, one serial (9-pin), two ethernet (RJ-45, one for dedicate/share mgmt), one analog VGA DB-15 connector Internal USB: One internal USB port (Type A)
Security features (TPM is optional)	Power-on password/administrator password, Trusted Platform Module (TCG 1.2-compliant) on selected models	*** Some models: one 625W fixed power supply	

# ThinkServer TD340 Relationship Model

### List of ThinkServer TD340 Relationship models

Type-	Intel Year Bressess	2nd	Mamani	Disk	RAID	Storono	Ontical			ThinkServer Management Module				Preloaded	Power	Warranty (-year,
model	Intel Xeon Processor ounced January 21, 2014	CPU	Memory	Bays	controller	Storage	Optical	ethernet	(IDM)	Premium (Premium)	kit	Graphics	IPW	os	Supply	on-site)
iviouei(s) arimo	Juniced January 21, 2014	_														
70B60002UX	Xeon E5-2420 v2 6C/2.2GHz/15MB/1600MHz	No	8GBx4 1600MHz LVRDIMM	4x3.5" HS (SATA/SAS)	RAID500 +Upgrade	4x2TB 3.5" SATA	DVD±RW	350T2	IDM	TMM Premium	No	No	TPM	No	2x800W Redundant	3
70B60003UX	Xeon E5-2440 v2 8C/1.9GHz/20MB/1600MHz	2nd	8GBx8 1600MHz LVRDIMM	8x3.5" HS (SATA/SAS)	RAID700	8x2TB 3.5" SAS	DVD±RW	350T2	IDM	TMM Premium	No	No	ТРМ	No	2x800W Redundant	3
70B60004UX	Xeon E5-2450 v2 8C/2.5GHz/20MB/1600MHz	2nd	8GBx12 1600MHz LVRDIMM	16x2.5" HS (SATA/SAS)	RAID710 +CacheVault	8x300GB 2.5" SAS	DVD±RW	350T4	IDM	TMM Premium	No	No	TPM	No	2x800W Redundant	3

- For detailed platform specifications, please see <u>ThinkServer TD340 Platform Specifications</u> sheets
   For optional configurations of ThinkServer TD340, please see <u>ThinkServer TD340 Optional Configurations</u> sheets
   For ThinkServer TD340 operating system and virtualization supportability, please see <u>ThinkServer TD340 Operating System and Virtualization Supportability Matrix</u> sheets
   For Lenovo services upgrade options for ThinkServer TD340, please see <u>ThinkServer TD340 Services Upgrade Options</u> sheets

# ThinkServer TD340 Platform Systems Specifications - I of II

Components	Specifications										
Mechanical	• 7.68" W x 23.4" • 195mm W x 595	<ul> <li>Tower, rack-mountable to 5U via optional conversion kit</li> <li>7.68" W x 23.4" D x 16.9" H (without foot)</li> <li>195mm W x 595mm D x 430mm H (without foot)</li> </ul>									
Ohinaat	• 57.3 lb (26kg) max configuration										
Chipset	pset Intel C606 Chipset Two LGA1356 sockets, supports up to two processors from Intel Xeon E5-2400 v2 or Xeon E5-2400 families,										
	the following proc				633013 110	III IIILEI Z	CEUII E3-2	400 VZ 01 7	(e011 E3-2400	iaiiiiles,	
	31			<u> </u>	Processor	s Specifi	cations*				
	Processor Numb	er # of	# of	Clock	May Turbo	Sopeciii	QPI		Memory	Part	
	T TOOCSSOT TRAITIB		Threads	Speed I	Max Turbo Frequency	Cache	Speed	Max TDP	Speed	Number	
	Intel Xeon E5-24										
	Xeon E5-2470 v2	2 10	20	2.4 GHz	3.2 GHz	25MB	8 GT/s	95W	DDR3-1600	0C19561	
	Xeon E5-2450L v				2.1 GHz	1	7.2 GT/s	60W	DDR3-1600		
	Xeon E5-2450 v2				3.3 GHz	20MB	8 GT/s	95W	DDR3-1600		
	Xeon E5-2440 v2				2.4 GHz		7.2 GT/s	95W	DDR3-1600		
Processors	Xeon E5-2430L v				2.8 GHz		7.2 GT/s	60W	DDR3-1600		
	Xeon E5-2430 v2			2.5 GHz	3 GHz		7.2 GT/s	80W	DDR3-1600		
	Xeon E5-2420 v2				2.7 GHz		7.2 GT/s	80W	DDR3-1600		
	Xeon E5-2407 v2				2.4 GHz		6.4 GT/s	80W	DDR3-1000	1	
	Xeon E5-2403 v2				1.8 GHz		6.4 GT/s	80W	DDR3-1333		
	Intel Xeon E5-24			1.0 GHZ	1.0 GHZ	TOMB	0.4 01/5	OUVV	DDN3-1333	10019307	
				1.0.011-	0.4.01.1-	1 E M D	7.0.CT/o	OF M	DDR3-1333	0400456	
	Xeon E5-2420	6	12	1.9 GHz	2.4 GHz	IDIVIB	7.2 G 1/S	95 W	DDR3-1333	UA89456	
Memory type	Notes: All processors specific information here information here interest in the information here. Intel may update this info00MHz, LV UD	ein is provid s informatio	ded "as-is". In in non-sc	heduled. Fo	or latest info	rmation, į	olease see <u>l</u>	nttp://ark.inte	l.com/		
Memory DIMMs	Twelve DIMM soc	kets, six [	DIMM sock	ets per pr	ocessor		•				
Memory capacity	Up to 192GB DDI				up to 48G	B DDR3	LV UDIMI	M (4GB x 1	2)		
Memory protection	ECC, memory mi	rroring, m	emory spa	aring							
۸ ما ما نائات می می می می در	Actual memory operating speed depends on processor memory controller speed, installed memory speed, and quantity of memory DIMMs     Maximum memory operating speed are 1333MT/s on LV UDIMM models										
Additional memory disclaimers				I/S ON LV UD	IIVIIVI moaeis						
iodiairiioio		ver six DIMMs requires dual processors  xing of LV UDIMM or LV RDIMM is not supported									
Disk bays	Supports one of the following disk bay configurations:  4 x 3.5" non-hot swap disk bays, supports SATA non-hot swap hard drives  4 x 3.5" hot-swap Disk bays, supports SATA/SAS hot-swap hard drives or SSD drives  8 x 3.5" hot-swap Disk bays, supports SATA/SAS hot-swap hard drives or SSD drives  8 x 2.5" hot-swap Disk bays, supports SATA/SAS hot-swap hard drives or SSD drives  16 x 2.5" hot-swap Disk bays, supports SATA/SAS hot-swap hard drives or SSD drives										
	4 x 3.5" hot-swap 8 x 3.5" hot-swap 8 x 2.5" hot-swap	Disk bays Disk bays Disk bays	s, supports s, supports s, supports	S SATA/SA S SATA/SA S SATA/SA	เS hot-swa เS hot-swa เS hot-swa	p hard o p hard o p hard o	lrives or St Irives or St Irives or St	SD drives SD drives			
	4 x 3.5" hot-swap 8 x 3.5" hot-swap 8 x 2.5" hot-swap 16 x 2.5" hot-swa	Disk bays Disk bays Disk bays	s, supports s, supports s, supports vs, suppor	S SATA/SA S SATA/SA S SATA/SA ts SATA/S	S hot-swa S hot-swa S hot-swa AS hot-swa Transfer rates	p hard c p hard c p hard c ap hard (	Irives or SS Irives or SS Irives or SS drives or S Optional up	SD drives SD drives SSD drives ogrades			
	4 x 3.5" hot-swap 8 x 3.5" hot-swap 8 x 2.5" hot-swap 16 x 2.5" hot-swa RAID adapter RAID 100 (onboard)	Disk bays Disk bays Disk bays p Disk bay	s, supports s, supports s, supports vs, suppor	S SATA/SA S SATA/SA S SATA/SA ts SATA/S Cache	AS hot-swa AS hot-swa AS hot-swa AS hot-swa Transfer rates 6Gb/s	p hard of the p hard of the p hard optional add RA	Irives or SS Irives or SS Irives or SS drives or S Optional up upgrade k ID 5 suppo	SD drives SD drives SSD drives ogrades sey, ort			
	4 x 3.5" hot-swap 8 x 3.5" hot-swap 8 x 2.5" hot-swap 16 x 2.5" hot-swa RAID adapter RAID 100 (onboard) RAID 300 (onboard)	Disk bays Disk bays Disk bays p Disk bay Disk type	s, supports s, supports s, supports rs, support RAID support 0, 1, 10	S SATA/SA S SATA/SA S SATA/SA ts SATA/S Cache	S hot-swa S hot-swa S hot-swa AS hot-swa Transfer rates 6Gb/s	p hard op hard op hard optional add RA optional add RA	lrives or Si Irives or Si Irives or Si Dptional up upgrade k D 5 suppo upgrade k D 5 suppo	SD drives SD drives SSD drives ogrades key, ort key, ort			
configurations	4 x 3.5" hot-swap 8 x 3.5" hot-swap 8 x 2.5" hot-swap 16 x 2.5" hot-swa RAID adapter RAID 100 (onboard) RAID 300 (onboard)	Disk bays Disk bays Disk bays Disk bays Disk type SATA	s, supports s, supports s, supports s, support RAID support 0, 1, 10	S SATA/SA S SATA/SA S SATA/SA ts SATA/S (* Cache	S hot-swa S hot-swa S hot-swa AS hot-swa Transfer rates 6Gb/s	p hard op hard op hard op hard optional add RA optional add RA optional opt	Irives or SSIrives	SD drives SD drives SSD drives ogrades eey, ort eey, teey,			
configurations	4 x 3.5" hot-swap 8 x 3.5" hot-swap 8 x 2.5" hot-swap 16 x 2.5" hot-swa RAID adapter RAID 100 (onboard) RAID 300 (onboard) RAID 500 (LSI 9240-8i)	Disk bays Disk bays Disk bays p Disk bay Disk type SATA	s, supports, sup	S SATA/SA S SATA/SA S SATA/SA ts SATA/SA Cache	S hot-swa S hot-swa S hot-swa AS hot-swa Transfer rates 6Gb/s 6Gb/s	p hard op hard op hard of ap hard of optional add RA optional add RA optional add RA optional optional optional optional optional optional optional optional	Irives or Strives or S	SD drives SD drives SSD drives ogrades sey, ort sey, ort sey, upport Battery			
Configurations  RAID support	A x 3.5" hot-swap 8 x 3.5" hot-swap 8 x 2.5" hot-swap 16 x 2.5" hot-swa RAID adapter RAID 100 (onboard) RAID 300 (onboard) RAID 500 (LSI 9240-8i) RAID 700 (LSI 9260-8i)	Disk bays Disk bays Disk bays p Disk bays p Disk type SATA SATA/SAS	s, supports, supports, supports, supports, supports, supports, supports, sys, sys, sys, sys, sys, sys, sys, s	S SATA/SA S SATA/SA S SATA/SA ts SATA/S Cache	S hot-swa S hot-swa S hot-swa AS hot-swa Transfer rates 6Gb/s 6Gb/s	p hard cp hard cp hard cap hard cop hard cap hard coptional add RA optional add RA optional Backup  optional sidd RA optional add RA optional coptional coptional coptional coptional coptional sidd RA optional Backup  optional coptional	Irives or Strives or S	SD drives SD drives SD drives SSD drives ogrades sey, ort sey, ort sey, opport Battery J08) ault (CV) ade Pro 2.0			
configurations	4 x 3.5" hot-swap 8 x 3.5" hot-swap 8 x 2.5" hot-swap 16 x 2.5" hot-swa RAID adapter RAID 100 (onboard) RAID 300 (onboard) RAID 500 (LSI 9240-8i) RAID 700 (LSI 9260-8i)	Disk bays Disk bays Disk bays p Disk bays p Disk type SATA SATA/SAS SATA/SAS	s, supports, supports, supports, supports, supports, supports, supports, sys, sys, sys, sys, sys, sys, sys, s	S SATA/SA S SATA/SA S SATA/SA ts SATA/S Cache	S hot-swa S hot-swa S hot-swa S hot-swa AS hot-sw AS hot-sw  Transfer rates 6Gb/s 6Gb/s 6Gb/s 6Gb/s	p hard cp hard cp hard cap har	Irives or Strives or S	SD drives SD drives SD drives SSD drives ogrades sey, ort sey, ort sey, opport Battery J08) ault (CV) ade Pro 2.0			
onfigurations	4 x 3.5" hot-swap 8 x 3.5" hot-swap 8 x 2.5" hot-swap 16 x 2.5" hot-swa RAID adapter RAID 100 (onboard) RAID 300 (onboard) RAID 500 (LSI 9240-8i) RAID 700 (LSI 9260-8i)	Disk bays Disk bays Disk bays p Disk bays p Disk type SATA SATA/SAS SATA/SAS SATA/SAS	s, supports, supports, supports, supports, supports, supports, supports, sys, sys, sys, sys, sys, sys, sys, s	S SATA/SA S SATA/SA S SATA/SA ts SATA/S  Cache  Cac	S hot-swa S hot-swa S hot-swa S hot-swa AS hot-swa AS hot-sw Transfer rates 6Gb/s 6Gb/s 6Gb/s 6Gb/s	p hard cp hard cp hard cap har	Irives or Strives or S	SD drives SD drives SD drives SSD drives ogrades sey, ort sey, ort sey, opport Battery J08) ault (CV) ade Pro 2.0			

# ThinkServer TD340 Platform Systems Specifications - II of II

Components	Specifications								
Front ports	Two USB 2.0	Two USB 2.0							
Rear ports	Four USB 2.0, one seria	Four USB 2.0, one serial (9-pin), two ethernet (RJ-45, one for dedicate/share mgmt), one analog VGA DB-15 connector							
Internal USB	One internal USB port (	Type A)							
Expansion Slots	Siot 1: half-length, full-h Slot 2: half-length, full-h Slot 3: half-length, full-h Slot 4: half-length, full-h Slot 5: half-length, full-h	Up to six PCI-Express slots (only slot 1, 2, 5 are functional for single processor models): Slot 1: half-length, full-height, 32-bit PCI 2.3 Slot 2: half-length, full-height, PCIe 3.0 x8 (x4 elec) Slot 3: half-length, full-height, PCIe 3.0 x8 Slot 4: half-length, full-height, PCIe 3.0 x8 Slot 5: half-length, full-height, PCIe 3.0 x8 Slot 6: half-length, full-height, PCIe 3.0 x8 (near CPU)							
Graphics	Onboard Aspeed AST2	Onboard Aspeed AST2300 graphics/management processor, one VGA DB-15 on rear ( <i>Maximum resolution: 1600x1200@60Hz</i> ). Discrete NVIDIA NVS 300 graphics adapter is available on selected models							
Intelligent Diagnostics Module (optional)	IDM LED lights indicate	gent Diagnostics Module (IDM) failing component category							
Systems management (TMM Premium is optional)	<ul> <li>Onboard Aspeed AST optional ThinkServer</li> <li>Front control panel LE</li> </ul>	Onboard Aspeed AST2300 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC); optional <b>ThinkServer Management Module</b> Premium for iKVM functions     Front control panel LEDs shows the status of power, hard drive activity, network, system     ThinkServer EasyStartup/EasyManage/EasyUpdate							
Security features (TPM is optional)		e (TCG 1.2-compliant, optional)							
Power supply	<ul> <li>One fixed 625 watts, t</li> </ul>	wer supplies	cess, hot-swap, 80 PLUS Gold qua						
	Environmental certifications	<ul> <li>Energy Star Server 2.0 qual</li> <li>Energy Star Server 1.1 qual</li> <li>RoHS-compliant</li> </ul>	ified for models with 800 watts hot- ified for models with 625 watts fixed	swap PSU d PSU					
	EMC FCC Class A, CSA, CE								
	240VA Supports								
	Temperature - operating	Temperature - 50 ° E to 95 ° E (10 ° C to 35 ° C)							
	Temperature - non operating (no package)	emperature - lon operating -10 °C to 60 °C							
	Temperature - non operating (with package)	-40 °C to 60 °C							
	Altitude - operating	Supported Altitude (unpressurized): 0-10000ft (0-3048m)							
	Humidity - operating	10%~80%, non-condensing							
Safety, environment, and certifications	Humidity - non operating (no package)	8%~90%, non-condensing							
	Humidity - non operating (with package)	8%~90%, non-condensing							
			System	Configuration					
		Category	Entry level	High-end					
		CPU	1 x CPU	2 x CPU					
		Optical Drive	1 DVD-ROM	1 DVD-ROM					
		Drive Bays	4 x 3.5" direct cable	8 x 3.5" hot-swap					
	Acoustic noise	HDD	2 x 500GB 3.5" SATA	8 x 2TB 3.5" SAS					
	(idle/working mode)	Memory	2GB x 1 (LV UDIMM)	8GB x 12 (LV RDIMM)					
	(.2.0,	PSU	1 x 625 watts fixed	1 x 800 watts hot-swap					
		RAID	RAID 1	RAID 5					
		Expansion Adapters	No	1 x RAID 700 2 x Ethernet Adapters					
		Sound Pressure (operating)	37.0 dB(A)	42.0 dB(A)					
		Sound Pressure (idle)	35.0 dB(A)	38.0 dB(A)					

# **ThinkServer TD340 Optional Configurations**

Partial list of accessories supported on ThinkServer TD340
ThinkServer Ready accessories are available through Lenovo Business Partners. Locate a Business Partner near you at: bplocator.lenovo.com

Option Number	
	Processors
0A89456	Intel Xeon E5-2420 Processor Option for ThinkServer TD340
0C19561	Intel Xeon E5-2470 v2 Processor Option for ThinkServer TD340
0C19562	Intel Xeon E5-2450 v2 Processor Option for ThinkServer TD340
0C19563	Intel Xeon E5-2440 v2 Processor Option for ThinkServer TD340
0C19564	Intel Xeon E5-2430 v2 Processor Option for ThinkServer TD340
0C19565	Intel Xeon E5-2420 v2 Processor Option for ThinkServer TD340
0C19566	Intel Xeon E5-2407 v2 Processor Option for ThinkServer TD340
0C19567	Intel Xeon E5-2403 v2 Processor Option for ThinkServer TD340
0C19568	Intel Xeon E5-2450L v2 Processor Option for ThinkServer TD340
0C19569	Intel Xeon E5-2430L v2 Processor Option for ThinkServer TD340
	Memory
0C19499	ThinkServer 4GB DDR3L-1600MHz (1Rx8) ECC UDIMM
0C19500	ThinkServer 8GB DDR3L-1600MHz (2Rx8) ECC UDIMM
0C19533	ThinkServer 4GB DDR3L-1600MHz (1Rx8) RDIMM
0C19534	ThinkServer 8GB DDR3L-1600MHz (2Rx8) RDIMM
0C19535	ThinkServer 16GB DDR3L-1600MHz (2Rx4) RDIMM
11.0000	Drives - 3.5"
	3.5" Cabled SATA Hard Drives
0C19501	ThinkServer 3.5" 500GB 7.2K Enterprise SATA 6Gbps Hard Drive
0C19502	ThinkServer 3.5" 1TB 7.2K Enterprise SATA 6Gbps Hard Drive
0C19503	ThinkServer 3.5" 2TB 7.2K Enterprise SATA 6Gbps Hard Drive
0C19504	ThinkServer 3.5" 3TB 7.2K Enterprise SATA 6Gbps Hard Drive
0C19505	ThinkServer 3.5" 4TB 7.2K Enterprise SATA 6Gbps Hard Drive
0010000	3.5" Hot Swap SATA Hard Drives
0A89473	ThinkServer 500GB 3.5" 7.2K Enterprise SATA 6Gbps Hot Swap Hard Drive
0A89474	ThinkServer 1TB 3.5" 7.2K Enterprise SATA 6Gbps Hot Swap Hard Drive
0A89475	ThinkServer 2TB 3.5" 7.2K Enterprise SATA 6Gbps Hot Swap Hard Drive
0A89477	ThinkServer 3TB 3.5" 7.2K Enterprise SATA 6Gbps Hot Swap Hard Drive
0C19520	ThinkServer 4TB 3.5" 7.2K Enterprise SATA 6Gbps Hot Swap Hard Drive
0010020	3.5" Hot Swap 7.2K SAS Hard Drives
0C19530	ThinkServer 3.5" 1TB 7.2K SAS 6Gbps Hot Swap Hard Drive
0C19531	ThinkServer 3.5" 2TB 7.2K SAS 6Gbps Hot Swap Hard Drive
0C19532	ThinkServer 3.5" 3TB 7.2K SAS 6Gbps Hot Swap Hard Drive
0010002	3.5" Hot Swap 15K SAS Hard Drives
67Y2616	ThinkServer 3.5" 300GB 15K SAS 6Gbps Hot Swap Hard Drive
4XB0F28644	
+ADUI 20044	3.5" Hot Swap SATA Solid State Drives
0C19571	ThinkServer 2.5" 100GB MLC SATA Solid State Drive with 3.5" Kit
0C19571	ThinkServer 2.5" 200GB MLC SATA Solid State Drive with 3.5" Kit
0C19572	ThinkServer 2.5" 400GB MLC SATA Solid State Drive with 3.5" Kit
0019373	Drives - 2.5"
	2.5" Hot Swap SATA Hard Drives
0C19495	ThinkServer 500GB 7.2K 2.5" Enterprise SATA 6Gbps Hot Swap Hard Drive
0C19495 0C19496	Think Carvor 1TD 7.0K 0.5" Enterprise SATA 6Chap Het Cure Llerd Drive
00 19496	ThinkServer 1TB 7.2K 2.5" Enterprise SATA 6Gbps Hot Swap Hard Drive
67Y2619	2.5" Hot Swap 10K SAS Hard Drives ThinkServer 300GB 2.5" 10K SAS 6Gbps Hot Swap Hard Drive
67Y2619 67Y2621	Think Server 600CB 2.5" 10K SAS 6Chap Hot Swap Hard Drive
	ThinkServer 600GB 2.5" 10K SAS 6Gbps Hot Swap Hard Drive
0A89409	ThinkServer 900GB 2.5" 10K SAS 6Gbps Hot Swap Hard Drive
0400440	2.5" Hot Swap SATA Solid State Drives
0A89418	ThinkServer 2.5" 200GB MLC SATA Solid State Drive (HS)
0A89419	ThinkServer 2.5" 400GB MLC SATA Solid State Drive (HS)
0A89420	ThinkServer 2.5" 100GB MLC SATA Solid State Drive (HS)

Option Number	Option Description
0 0 11 11 11 11 11 11 11 11 11 11 11 11	RAID
0A89422	ThinkServer RAID 300 Upgrade Key for Advanced RAID
0A89464	ThinkServer RAID 500 Adapter II
0A89407	ThinkServer RAID 500 Upgrade Key for Advanced RAID
0A89463	ThinkServer RAID 700 Adapter II
67Y2647	ThinkServer RAID 700 Battery
0C19489	ThinkServer RAID 710 Adapter
0C19490	ThinkServer RAID CacheVault Data Protection for RAID 710
0C19491	ThinkServer RAID FastPath Feature Upgrade Key for RAID 710
0C19492	ThinkServer RAID CacheCade Pro 2.0 Feature Upgrade Key for RAID 710
	Ethernet
0C19506	ThinkServer 1Gbps Ethernet I350-T2 Server Adapter
0C19507	ThinkServer 1Gbps Ethernet I350-T4 Server Adapter
0C19486	Lenovo 10Gbps Ethernet X520-DA2 Server Adapter (SPF+)
0C19487	Lenovo 10Gbps Ethernet X520-SR2 Server Adapter (Fibre)
0C19497	Lenovo 10Gbps Ethernet X540-T2 Server Adapter
0C19488	Lenovo 10Gbps Ethernet Fiber Module
	HBA
0C19476	ThinkServer LPe1250 Single Port 8Gb Fibre Channel HBA by Emulex
0C19478	ThinkServer LPe12002 Dual Port 8Gb Fibre Channel HBA by Emulex
0C19483	ThinkServer QLE8242-CU-CK Dual Port CNA by QLogic
0C19482	ThinkServer QLE2562 Dual Port 8Gb Fibre Channel HBA by QLogic
	Redundant Power Supply
4X20E54691	ThinkServer 800W Gold Hot Swap Redundant Power Supply for Tower
	Other
0C19515	ThinkServer Tower to Rack Shelf Conversion Kit
67Y2624	ThinkServer Management Controller Premium Upgrade
73P5220	Lenovo Preferred Pro Keyboard USB - US English 103P
06P4069	Lenovo Optical Mouse
	Microsoft Windows Server ROK
4XI0E51561	Windows Server 2012 R2 Standard ROK (2 CPU/2VMs)
4XI0E51562	Windows Server 2012 R2 Datacenter ROK (2 CPU)
	Windows Server 2012 R2 Essentials ROK (1-2 CPU)
82972SM	Windows Server 2012 Standard ROK (2 CPU/2VMs)
82972DM	Windows Server 2012 Datacenter ROK (2 CPU)
82972EM	Windows Server 2012 Essentials ROK (1-2 CPU)
	nation on server accessories, please visit:
www.ienovo.co	om/support/accessories
www.ienovo.co	om/support/thinkserveraccessories
www.ienovo.co	om/support/security
Other accessor	ies at www.lenovo.com/accessories
Accessories Gu	ide pdf at www.lenovo.com/accessoriesguide

## ThinkServer TD340 Operating System and Virtualization Supportability Matrix

List of operating system and virtualization software supported on ThinkServer TD340

and the same of th				1
Operating System/Virtualization	Certified	Support ROK	Supports EasyStartup	Preloaded
Windows Server 2008 x8	6 Edition		l .	1
Windows Server 2008 Standard Edition (x86)			•	
Windows Server 2008 Enterprise Edition (x86)			•	
Windows Server 2008 Datacenter Edition (x86)			•	
Windows Server 2008 x6	4 Edition			
Windows Server 2008 Standard Edition (x64) (Include Hyper-v)	•		•	
Windows Server 2008 Enterprise Edition (x64) (Include Hyper-v)	•		•	
Windows Server 2008 Datacenter Edition (x64) (Include Hyper-v)	•		•	
Windows Server 2008 R2 (x	64) with SF	1		
Windows Server 2008 Standard Edition R2 with SP1(Include Hyper-v)	•	•	•	
Windows Server 2008 Enterprise Edition R2 with SP1(Include Hyper-v)	•	•	•	
Windows Server 2008 Datacenter Edition R2 with SP1(Include Hyper-v)	•	•	•	
Windows Small Business S	erver 2011		1	
Windows Small Business Server 2011 Essentials	•		•	
Windows Small Business Server 2011 Standard	•	•	•	
Windows Small Business Server Premium Add-On (including Hyper-V)	•	•	•	
Windows Server 20	)12		I	
Windows Server 2012 Standard (Include Hyper-v)	•	•	•	•
Windows Server 2012 Datacenter (Include Hyper-v)	•	•	•	•
Windows Server 2012 Essentials	•	•	•	•
Windows Server 201	2 B2		L	
Windows Server 2012 R2 Standard (Include Hyper-v)	•	•	•	
Windows Server 2012 R2 Datacenter (Include Hyper-v)	•	•	•	•
Windows Server 2012 R2 Essentials	•	•	•	•
Windows Server 2012 R2 Hyper-V			•	
SUSE Linux Enterprise S	orver v86			
SUSE Linux Enterprise Server 10 sp4 (32 bit)	l sei voo		•	
SUSE Linux Enterprise Server 10 sp4 (32 bit)			•	
SUSE Linux Enterprise S	orvor v64			
SUSE Linux Enterprise Server 10 sp4 (64 bit)	l vei x04		•	
SUSE Linux Enterprise Server 10 sp4 (64 bit) SUSE Linux Enterprise Server 11 sp2 (64 bit)	_		•	
RedHat Enterprise Linux Serv	or (DUEL)	V06	•	
	ei (nnel).	X00	•	
RedHat RHEL 5.9 (32 bit) RedHat RHEL 5.10 (32 bit)	•		•	
	•		•	
RedHat RHEL 6.4 (32 bit)	•			
RedHat RHEL 6.5 (32 bit)	0		•	
RedHat Enterprise Linux S	server x64	I	-	T
RedHat RHEL 5.9 (64 bit)	•		•	
RedHat RHEL 5.10 (64 bit)	•		•	
RedHat RHEL 6.4 (64 bit)	•		•	
RedHat RHEL 6.5 (64 bit)	•		•	
VMware x64		I		
Vmware ESXi 5.1 U1	•		•	•
Vmware ESXi 5.5	•		•	•
Citrix				
Citrix XenServer 6.1	•		•	
Citrix XenServer 6.02	•		•	

#### Note

- For more information on ThinkServer operating system and virtualization software, please visit ThinkServer Software page: http://shop.lenovo.com/us/en/servers/thinkserver/server-software.html
- For ThinkServer operating system and virtualization software options, please visit ThinkServer OS and virtualization Options document: 
  http://www.lenovo.com/images/products/server/pdfs/datasheets/ThinkServer\_OS\_&\_Virtualization\_Options\_Datasheet.pdf

## ThinkServer TD340 Services Upgrade Options

Partial list of Lenovo Services for ThinkServer TD340 models with 3-year onsite base warranty For more information see: http://www.lenovo.com/services\_warranty/us/en/lenovo-warranty.html

3-year Onsite 24x7x4 Hour Response	Upgrade Service Description	Part Number
3-year Onsite 24x7x4 Hour Response		
3-year Onsite 24x7x4 Hour Response		5WS0F46876
3-year Onsite 9x5x4 Hour Response		
4-year Onsite 24x7x4 Hour Response		
4-year Onsite 24x7x8 Hour Response		
4-year Onsite 9x5x4 Hour Response		
### A-year Onsite 24x7x4 Hour Response		
5-year Onsite 24x7x4 Hour Response         5WS0F46837           5-year Onsite 24x7x8 Hour Response         5WS0F46861           5-year Onsite 9x5x4 Hour Response         5WS0F46861           5-year Onsite 9x5x4 Hour Response         5WS0F46922           Keep Your Drive (KYD) Service           3-year (PD)         5WS0F46823           3-year Onsite 24x7x4 Hour Response + KYD         5WS0F46821           3-year Onsite 24x7x4 Hour Response + KYD + Priority Support         5WS0F46819           3-year Onsite 9x5x4 Hour Response + KYD         5WS0F46819           3-year Onsite 24x7x4 Hour Response + KYD         5WS0F46819           4-year Onsite 24x7x4 Hour Response + KYD         5WS0F46873           4-year Onsite 24x7x4 Hour Response + KYD         5WS0F46863           4-year Onsite 24x7x4 Hour Response + KYD         5WS0F46864           4-year Onsite 9x5x4 Hour Response + KYD         5WS0F46865           4-year Onsite 9x5x4 Hour Response + KYD         5WS0F46866           5-year Onsite 24x7x8 Hour Response + KYD         5WS0F46866           5-year Onsite 24x7x8 Hour Response + KYD         5WS0F46866           5-year Onsite 9x5x4 Hour Response + KYD         5WS0F46866           5-year Onsite 9x5x4 Hour Response + FYD         5WS0F46866           5-year Onsite 9x5x4 Hour Response + Priority Support         5WS0F46866		
5-year Onsite 24x7x8 Hour Response         5WS0F46801           5-year Onsite 9x5x4 Hour Response         5WS0F46902           Keep Your Drive (KYD) Service           3-year KYD         5WS0F46823           3-year Onsite 24x7x4 Hour Response + KYD         5WS0F46823           3-year Onsite 24x7x4 Hour Response + KYD         5WS0F46819           3-year Onsite 24x7x8 Hour Response + KYD         5WS0F46819           3-year Onsite 9x5x4 Hour Response + KYD         5WS0F46819           4-year Onsite 24x7x8 Hour Response + KYD         5WS0F46819           4-year Onsite 24x7x4 Hour Response + KYD         5WS0F46819           4-year Onsite 24x7x4 Hour Response + KYD         5WS0F46814           4-year Onsite 24x7x4 Hour Response + KYD         5WS0F46850           4-year Onsite 24x7x8 Hour Response + KYD         5WS0F46850           4-year Onsite 9x5x4 Hour Response + KYD         5WS0F46850           5-year Onsite 24x7x4 Hour Response + KYD         5WS0F46869           5-year Onsite 24x7x4 Hour Response + KYD         5WS0F46869           5-year Onsite 9x5x4 Hour Response + KYD         5WS0F46834           5-year Onsite 9x5x4 Hour Response + KYD         5WS0F46865           5-year Onsite 9x5x4 Hour Response + Priority Support         5WS0F46865           5-year Onsite 9x5x4 Hour Response + Priority Support         5WS0F46866		
5-year Onsite 9x5x4 Hour Response 5WS0F46903 5-year Onsite NBD 5WS0F46922  Keep Your Drive (KYD) Service  3-year KYD 5WS0F46823 3-year Onsite 24x7x4 Hour Response + KYD 5WS0F46821 3-year Onsite 24x7x8 Hour Response + KYD 5WS0F46821 3-year Onsite 24x7x8 Hour Response + KYD 5WS0F46819 3-year Onsite 9x5x4 Hour Response + KYD 5WS0F46819 3-year Onsite 9x5x4 Hour Response + KYD 5WS0F46819 4-year Onsite 24x7x4 Hour Response + KYD 5WS0F46819 4-year Onsite 24x7x4 Hour Response + KYD 5WS0F46819 4-year Onsite 24x7x4 Hour Response + KYD 5WS0F46850 4-year Onsite 24x7x4 Hour Response + KYD 5WS0F46850 4-year Onsite 9x5x4 Hour Response + KYD 5WS0F46858 4-year Onsite 9x5x4 Hour Response + KYD 5WS0F46866 5-year Onsite 24x7x4 Hour Response + KYD 5WS0F46866 5-year Onsite 24x7x4 Hour Response + KYD 5WS0F46866 5-year Onsite 24x7x4 Hour Response + KYD 5WS0F46866 5-year Onsite 9x5x4 Hour Response + KYD 5WS0F46866 5-year Onsite 9x5x4 Hour Response + KYD 5WS0F46866  Priority Technical Support 3-year Onsite 24x7x8 Hour Response + KYD 5WS0F46860 3-year Onsite 24x7x8 Hour Response + KYD 5WS0F46860 3-year Onsite 24x7x8 Hour Response + Friority Support 5WS0F46800 3-year Onsite 24x7x8 Hour Response + Friority Support 5WS0F46800 3-year Onsite 24x7x8 Hour Response + Friority Support 5WS0F46815 3-year Onsite 24x7x8 Hour Response + Friority Support 5WS0F46815 3-year Onsite 9x5x4 Hour Response + Friority Support 5WS0F46886 4-year Onsite 9x5x4 Hour Response + Friority Support 5WS0F46886 4-year Onsite 9x5x4 Hour Response + Friority Support 5WS0F46886 4-year Onsite 9x5x4 Hour Response + Friority Support 5WS0F46886 4-year Onsite 9x5x4 Hour Response + KYD + Priority Support 5WS0F46886 4-year Onsite 9x5x4 Hour Response + Friority Support 5WS0F46886 5-year Onsite 9x5x4 Hour Response + Friority Support 5WS0F46886 5-year Onsite 9x5x4 Hour Response + Friority Support 5WS0F46886 5-year Onsite 9x5x4 Hour Response + Friority Support 5WS0F46886 5-year Onsite 9x5x4 Hour Response + Friority Support 5WS0F46881 5-year Onsite 9x5x4 Hour Response + Friority Support 5		
S-year Onsite NBD		
Skep Your Drive (KYD) Service   3-year Chip   5-year (KYD   5-year (KYD   5-year (MYD   5-year (MY		
3-year Onsite 24x7x4 Hour Response + KYD	Keep Your Drive (KYD) Service	1
3-year Onsite 24x7x4 Hour Response + KYD + Priority Support  3-year Onsite 24x7x8 Hour Response + KYD  3-year Onsite 24x7x8 Hour Response + KYD  5WS0F46819  3-year Onsite 9x5x4 Hour Response + KYD  4-year Onsite 24x7x4 Hour Response + KYD  5WS0F46850  4-year Onsite 24x7x8 Hour Response + KYD  5WS0F46850  4-year Onsite 9x5x4 Hour Response + KYD  5WS0F46858  4-year Onsite 9x5x4 Hour Response + KYD  5WS0F46858  4-year Onsite NBD + KYD  5WS0F46868  5-year Onsite 24x7x4 Hour Response + KYD  5WS0F46866  5-year Onsite 24x7x4 Hour Response + KYD  5WS0F46866  5-year Onsite 9x5x4 Hour Response + KYD  5WS0F46862  5-year Onsite 9x5x4 Hour Response + KYD  5WS0F46865  6-year Onsite NBD + KYD  5WS0F46865  7-year Onsite NBD + KYD  5WS0F46865  8-year Onsite 9x5x4 Hour Response + Priority Support  3-year VN3 + Priority Support  3-year Onsite 24x7x8 Hour Response + Priority Support  3-year Onsite 9x5x4 Hour Response + Priority Support  3-year Onsite 9x5x4 Hour Response + Priority Support  4-year Onsite 9x5x4 Hour Response + Priority Support  5WS0F46897  3-year Onsite 9x5x4 Hour Response + Priority Support  5WS0F46896  4-year Onsite 9x5x4 Hour Response + Priority Support  5WS0F46896  5-year Onsite 9x5x4 Hour Response + Priority Support  5WS0F46896  4-year Onsite 9x5x4 Hour Response + Priority Support  5WS0F46896  5-year Onsite 9x5x4 Hour Response + Priority Support  5WS0F46896  5-year Onsite 9x5x4 Hour Response + Priority Support  5WS0F46896  5-year Onsite 9x5x4 Hour Response + Priority Support  5WS0F46896  5-year Onsite 9x5x4 Hour Response + Priority Support  5WS0F46891  5-year Onsite 9x5x4 Hour Response + Priority Support  5WS0F46893  5-year Onsite 24x7x4 Hour Response + Priority Support  5WS0F46893  5-year Onsite 24x7x4 Hour Response + Priority Support  5WS0F46893  5-year Onsite 24x7x4 Hour Response + Priority S		5WS0F46823
3-year Onsite 24x7x4 Hour Response + KYD + Priority Support  3-year Onsite 24x7x8 Hour Response + KYD  3-year Onsite 24x7x8 Hour Response + KYD  5WS0F46819  3-year Onsite 9x5x4 Hour Response + KYD  4-year Onsite 24x7x4 Hour Response + KYD  5WS0F46850  4-year Onsite 24x7x8 Hour Response + KYD  5WS0F46850  4-year Onsite 9x5x4 Hour Response + KYD  5WS0F46858  4-year Onsite 9x5x4 Hour Response + KYD  5WS0F46858  4-year Onsite NBD + KYD  5WS0F46868  5-year Onsite 24x7x4 Hour Response + KYD  5WS0F46866  5-year Onsite 24x7x4 Hour Response + KYD  5WS0F46866  5-year Onsite 9x5x4 Hour Response + KYD  5WS0F46862  5-year Onsite 9x5x4 Hour Response + KYD  5WS0F46865  6-year Onsite NBD + KYD  5WS0F46865  7-year Onsite NBD + KYD  5WS0F46865  8-year Onsite 9x5x4 Hour Response + Priority Support  3-year VN3 + Priority Support  3-year Onsite 24x7x8 Hour Response + Priority Support  3-year Onsite 9x5x4 Hour Response + Priority Support  3-year Onsite 9x5x4 Hour Response + Priority Support  4-year Onsite 9x5x4 Hour Response + Priority Support  5WS0F46897  3-year Onsite 9x5x4 Hour Response + Priority Support  5WS0F46896  4-year Onsite 9x5x4 Hour Response + Priority Support  5WS0F46896  5-year Onsite 9x5x4 Hour Response + Priority Support  5WS0F46896  4-year Onsite 9x5x4 Hour Response + Priority Support  5WS0F46896  5-year Onsite 9x5x4 Hour Response + Priority Support  5WS0F46896  5-year Onsite 9x5x4 Hour Response + Priority Support  5WS0F46896  5-year Onsite 9x5x4 Hour Response + Priority Support  5WS0F46896  5-year Onsite 9x5x4 Hour Response + Priority Support  5WS0F46891  5-year Onsite 9x5x4 Hour Response + Priority Support  5WS0F46893  5-year Onsite 24x7x4 Hour Response + Priority Support  5WS0F46893  5-year Onsite 24x7x4 Hour Response + Priority Support  5WS0F46893  5-year Onsite 24x7x4 Hour Response + Priority S	3-year Onsite 24x7x4 Hour Response + KYD	5WS0F46821
3-year Onsite 24x7x8 Hour Response + KYD 3-year Onsite 9x5x4 Hour Response + KYD 5WS0F46873 4-year Onsite 9x5x4 Hour Response + KYD 5WS0F46873 4-year Onsite 24x7x4 Hour Response + KYD 5WS0F46841 4-year Onsite 24x7x4 Hour Response + KYD + Priority Support 5WS0F46850 4-year Onsite 9x5x4 Hour Response + KYD 5WS0F46858 4-year Onsite 9x5x4 Hour Response + KYD 5WS0F46866 5-year Onsite 24x7x4 Hour Response + KYD 5WS0F46866 5-year Onsite 24x7x4 Hour Response + KYD 5WS0F46866 5-year Onsite 24x7x8 Hour Response + KYD 5WS0F46865 5-year Onsite 9x5x4 Hour Response + KYD 5WS0F46865 5-year Onsite 9x5x4 Hour Response + KYD 5WS0F46865 6-year Onsite 9x5x4 Hour Response + Priority Support 3-year KYD + Priority Support 3-year Onsite 24x7x8 Hour Response + Priority Support 5WS0F46862 3-year Onsite 24x7x8 Hour Response + FYD + Priority Support 5WS0F46869 3-year Onsite 24x7x8 Hour Response + Priority Support 5WS0F46869 3-year Onsite 24x7x8 Hour Response + Priority Support 5WS0F46897 3-year Onsite 9x5x4 Hour Response + KYD + Priority Support 5WS0F46897 3-year Onsite 9x5x4 Hour Response + FYD + Priority Support 5WS0F46897 3-year Onsite 9x5x4 Hour Response + Priority Support 5WS0F46897 3-year Onsite 9x5x4 Hour Response + Priority Support 5WS0F46886 4-year Onsite 24x7x8 Hour Response + Priority Support 5WS0F46886 4-year Onsite 9x5x4 Hour Response + Priority Support 5WS0F46886 4-year Onsite 9x5x4 Hour Response + Priority Support 5WS0F46886 4-year Onsite 9x5x4 Hour Response + Priority Support 5WS0F46886 4-year Onsite 9x5x4 Hour Response + Priority Support 5WS0F46886 5-year Onsite 9x5x4 Hour Response + Priority Support 5WS0F46886 5-year Onsite 9x5x4 Hour Response + Priority Support 5WS0F46886 5-year Onsite 9x5x4 Hour Response + Priority Support 5WS0F46886 5-year Onsite 24x7x4 Hour Response + Priority Support 5WS0F46886 5-year Onsite 24x7x4 Hour Response + Priority Support 5WS0F46887 5-year Onsite 24x7x4 Hour Response + Priority Support 5WS0F46887 5-year Onsite 24x7x4 Hour Response + Priority Support 5WS0F46887 5-year Onsite 9x5x4 Hour Respo		
4-year Onsite 24x7x4 Hour Response + KYD  4-year Onsite 24x7x4 Hour Response + KYD + Priority Support  5WS0F46850  4-year Onsite 24x7x8 Hour Response + KYD  5WS0F46858  4-year Onsite 9x5x4 Hour Response + KYD  5WS0F46868  5-year Onsite 24x7x4 Hour Response + KYD  5WS0F46869  5-year Onsite 24x7x4 Hour Response + KYD  5WS0F46866  5-year Onsite 9x5x4 Hour Response + KYD  5WS0F46865  6-year Onsite 9x5x4 Hour Response + KYD  5WS0F46865  7-year Onsite 24x7x4 Hour Response + Priority Support  3-year Onsite 24x7x4 Hour Response + Priority Support  3-year Onsite 24x7x8 Hour Response + Priority Support  5WS0F46897  3-year Onsite 9x5x4 Hour Response + Priority Support  5WS0F46991  3-year Onsite 9x5x4 Hour Response + Priority Support  5WS0F46915  3-year Onsite 9x5x4 Hour Response + Priority Support  5WS0F46886  4-year Onsite 9x5x4 Hour Response + Priority Support  5WS0F46886  4-year Onsite 9x5x4 Hour Response + Priority Support  5WS0F46886  4-year Onsite 9x5x4 Hour Response + Priority Support  5WS0F46887  5-year Onsite 9x5x4 Hour Response + Priority Support  5WS0F46886  4-year Onsite 9x5x4 Hour Response + Priority Support  5WS0F46887  5-year Onsite 9x5x4 Hour Response + Priority Support  5WS0F46931  5-year Onsite 9x5x4 Hour Response + Priority Support  5WS0F46931  5-year Onsite 24x7x8 Hour Response + Priority Support  5WS0F46931  5-year Onsite 24x7x8 Hour Response + Priority Support  5WS0F46931  5-year Onsite 24x7x8 Hour Response + Priority Support  5WS0F46931  5-year Onsite 24x7x8 Hour Response + Priority Support  5WS0F46931  5-year Onsite 24x7x8 Hour Response + Priority Support  5WS0F46876  5-year Onsite 9x5x4 Hour Response + Priority Support  5WS0F46876  5-year Onsite 9x5x4 Hour Response + Priority Sup		
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3-year Priority Support  4-year Onsite 24x7x4 Hour Response + Priority Support  5WS0F46886  4-year Onsite 24x7x8 Hour Response + KYD + Priority Support  5WS0F46854  4-year Onsite 9x5x4 Hour Response + KYD + Priority Support  5WS0F46887  4-year Onsite 9x5x4 Hour Response + Priority Support  5WS0F46921  4-year Onsite NBD + KYD + Priority Support  5WS0F46884  4-year Onsite NBD + Priority Support  5WS0F46884  5-year Onsite 24x7x4 Hour Response + KYD + Priority Support  5WS0F46928  5-year Onsite 24x7x4 Hour Response + Priority Support  5WS0F46933  5-year Onsite 24x7x8 Hour Response + Priority Support  5WS0F46881  5-year Onsite 9x5x4 Hour Response + Priority Support  5WS0F46881  5-year Onsite 9x5x4 Hour Response + KYD + Priority Support  5WS0F46878  5-year Onsite 9x5x4 Hour Response + Priority Support  5WS0F46878	3-year Onsite 9x5x4 Hour Response + KYD + Priority Support	5WS0F46915
4-year Onsite 24x7x4 Hour Response + Priority Support 5WS0F46886 4-year Onsite 24x7x8 Hour Response + KYD + Priority Support 5WS0F46854 4-year Onsite 9x5x4 Hour Response + KYD + Priority Support 5WS0F46887 4-year Onsite 9x5x4 Hour Response + Priority Support 5WS0F46921 4-year Onsite NBD + KYD + Priority Support 5WS0F46884 4-year Onsite NBD + Priority Support 5WS0F46881 5-year Onsite 24x7x4 Hour Response + KYD + Priority Support 5WS0F46928 5-year Onsite 24x7x4 Hour Response + Priority Support 5WS0F46933 5-year Onsite 24x7x8 Hour Response + KYD + Priority Support 5WS0F46881 5-year Onsite 9x5x4 Hour Response + Priority Support 5WS0F46881 5-year Onsite 9x5x4 Hour Response + Priority Support 5WS0F46878 5-year Onsite 9x5x4 Hour Response + Priority Support 5WS0F46878	3-year Onsite 9x5x4 Hour Response + Priority Support	5WS0F46935
4-year Onsite 24x7x8 Hour Response + KYD + Priority Support  4-year Onsite 9x5x4 Hour Response + KYD + Priority Support  5WS0F46887  4-year Onsite 9x5x4 Hour Response + Priority Support  5WS0F46921  4-year Onsite NBD + KYD + Priority Support  5WS0F46884  4-year Onsite NBD + Priority Support  5WS0F46931  5-year Onsite 24x7x4 Hour Response + KYD + Priority Support  5WS0F46933  5-year Onsite 24x7x4 Hour Response + Priority Support  5WS0F46933  5-year Onsite 24x7x8 Hour Response + Priority Support  5WS0F46881  5-year Onsite 24x7x8 Hour Response + Priority Support  5WS0F46881  5-year Onsite 9x5x4 Hour Response + KYD + Priority Support  5WS0F46878  5-year Onsite 9x5x4 Hour Response + Priority Support  5WS0F46878	3-year Priority Support	5WS0E76471
4-year Onsite 24x7x8 Hour Response + KYD + Priority Support 4-year Onsite 9x5x4 Hour Response + KYD + Priority Support 5WS0F46887 4-year Onsite 9x5x4 Hour Response + Priority Support 5WS0F46921 4-year Onsite NBD + KYD + Priority Support 5WS0F46884 4-year Onsite NBD + Priority Support 5-year Onsite 24x7x4 Hour Response + KYD + Priority Support 5-year Onsite 24x7x4 Hour Response + Priority Support 5-year Onsite 24x7x4 Hour Response + KYD + Priority Support 5-year Onsite 24x7x8 Hour Response + Friority Support 5-year Onsite 24x7x8 Hour Response + Priority Support 5-year Onsite 9x5x4 Hour Response + Priority Support	4-year Onsite 24x7x4 Hour Response + Priority Support	5WS0F46886
4-year Onsite 9x5x4 Hour Response + Priority Support       5WS0F46921         4-year Onsite NBD + KYD + Priority Support       5WS0F46884         4-year Onsite NBD + Priority Support       5WS0F46931         5-year Onsite 24x7x4 Hour Response + KYD + Priority Support       5WS0F46928         5-year Onsite 24x7x4 Hour Response + Priority Support       5WS0F46933         5-year Onsite 24x7x8 Hour Response + KYD + Priority Support       5WS0F46847         5-year Onsite 24x7x8 Hour Response + Priority Support       5WS0F46881         5-year Onsite 9x5x4 Hour Response + KYD + Priority Support       5WS0F46878         5-year Onsite 9x5x4 Hour Response + Priority Support       5WS0F46917	4-year Onsite 24x7x8 Hour Response + KYD + Priority Support	5WS0F46854
4-year Onsite NBD + KYD + Priority Support       5WS0F46884         4-year Onsite NBD + Priority Support       5WS0F46931         5-year Onsite 24x7x4 Hour Response + KYD + Priority Support       5WS0F46928         5-year Onsite 24x7x4 Hour Response + Priority Support       5WS0F46833         5-year Onsite 24x7x8 Hour Response + KYD + Priority Support       5WS0F46847         5-year Onsite 24x7x8 Hour Response + KYD + Priority Support       5WS0F46881         5-year Onsite 9x5x4 Hour Response + KYD + Priority Support       5WS0F46878         5-year Onsite 9x5x4 Hour Response + Priority Support       5WS0F46917	4-year Onsite 9x5x4 Hour Response + KYD + Priority Support	5WS0F46887
4-year Onsite NBD + Priority Support  5-year Onsite 24x7x4 Hour Response + KYD + Priority Support  5-year Onsite 24x7x4 Hour Response + Priority Support  5-year Onsite 24x7x4 Hour Response + Priority Support  5-year Onsite 24x7x8 Hour Response + KYD + Priority Support  5-year Onsite 24x7x8 Hour Response + Priority Support  5-year Onsite 9x5x4 Hour Response + KYD + Priority Support  5-year Onsite 9x5x4 Hour Response + Priority Support	4-year Onsite 9x5x4 Hour Response + Priority Support	5WS0F46921
5-year Onsite 24x7x4 Hour Response + KYD + Priority Support 5-year Onsite 24x7x4 Hour Response + Priority Support 5-year Onsite 24x7x8 Hour Response + KYD + Priority Support 5-year Onsite 24x7x8 Hour Response + Priority Support 5-year Onsite 24x7x8 Hour Response + Priority Support 5-year Onsite 9x5x4 Hour Response + KYD + Priority Support 5-year Onsite 9x5x4 Hour Response + Priority Support	4-year Onsite NBD + KYD + Priority Support	5WS0F46884
5-year Onsite 24x7x4 Hour Response + Priority Support 5-year Onsite 24x7x8 Hour Response + KYD + Priority Support 5-year Onsite 24x7x8 Hour Response + Priority Support 5-year Onsite 9x5x4 Hour Response + KYD + Priority Support 5-year Onsite 9x5x4 Hour Response + KYD + Priority Support 5-year Onsite 9x5x4 Hour Response + Priority Support	4-year Onsite NBD + Priority Support	5WS0F46931
5-year Onsite 24x7x8 Hour Response + KYD + Priority Support 5-year Onsite 24x7x8 Hour Response + Priority Support 5-year Onsite 9x5x4 Hour Response + KYD + Priority Support 5-year Onsite 9x5x4 Hour Response + Priority Support	5-year Onsite 24x7x4 Hour Response + KYD + Priority Support	5WS0F46928
5-year Onsite 24x7x8 Hour Response + KYD + Priority Support 5-year Onsite 24x7x8 Hour Response + Priority Support 5-year Onsite 9x5x4 Hour Response + KYD + Priority Support 5-year Onsite 9x5x4 Hour Response + Priority Support	5-year Onsite 24x7x4 Hour Response + Priority Support	5WS0F46933
5-year Onsite 9x5x4 Hour Response + KYD + Priority Support 5WS0F46878 5-year Onsite 9x5x4 Hour Response + Priority Support 5WS0F46917		5WS0F46847
5-year Onsite 9x5x4 Hour Response + Priority Support 5WS0F46917	5-year Onsite 24x7x8 Hour Response + Priority Support	5WS0F46881
5-year Onsite 9x5x4 Hour Response + Priority Support 5WS0F46917		5WS0F46878
5-year Onsite NBD + KYD + Priority Support 5WS0F46926		5WS0F46917
	5-year Onsite NBD + KYD + Priority Support	5WS0F46926
5-year Onsite NBD + Priority Support 5WS0F46853		5WS0F46853
5-year Priority Support 5WS0E77173		
5-year Onsite NBD + KYD + Priority Support 5PS0F15388		
5-year Onsite NBD + Priority Support 5WS0F15463		
5-year Priority Support 5WS0E77173	5-year Priority Support	5WS0E77173

Upgrade Service Description	Part Number
Post Warranty	
1-year Onsite 24x7x4 Hour Response	5WS0F46814
1-year Onsite 24x7x4 Hour Response + KYD	5WS0F46817
1-year Onsite 24x7x4 Hour Response + KYD + Priority Support	5WS0F46828
1-year Onsite 24x7x4 Hour Response + Priority Support	5WS0F46831
1-year Onsite 24x7x8 Hour Response	5WS0F46822
1-year Onsite 24x7x8 Hour Response + KYD	5WS0F46825
1-year Onsite 24x7x8 Hour Response + KYD	5WS0F46838
1-year Onsite 24x7x8 Hour Response + Priority Support	5WS0F46842
1-year Onsite 9x5x4 Hour Response	5WS0F46833
1-year Onsite 9x5x4 Hour Response + KYD	5WS0F46834
1-year Onsite 9x5x4 Hour Response + KYD + Priority Support	5WS0F46848
1-year Onsite 9x5x4 Hour Response + Priority Support	5WS0F46849
1-year Onsite NBD	5WS0F46856
1-year Onsite NBD + KYD	5WS0F46845
1-year Onsite NBD + KYD + Priority Support	5WS0F46893
TopSeller Priority (TopSeller models only)	
3-year Onsite 24x7x4 Hour Response	5WS0F46918
3-year Onsite 9x5x4 Hour Response	5WS0F46924
4-year Onsite NBD	5WS0F46929
3-year Onsite 24x7x4 Hour Response + Priority Support	5WS0F46870
3-year Onsite 9x5x4 Hour Response + Priority Support	5WS0F46879
3-year Priority Support	5WS0E76457
4-year Priority Support	5WS0E76482

#### Note:

#### 24x7x4: 4 Hour Onsite Response Time in 24x7 Service Window (requires Location Activation)

- 24 hours a day, 7 days a week, including nights and weekends
- Once the need for on-site presence is confirmed, an on-site technician is dispatched to arrive within 4 hours.
- Best coverage for business critical work loads

#### 9x5x4: 4 Hour Onsite Response Time in 9x5 Service Window (requires Location Activation)

• Once the need for on-site presence is confirmed, an on-site technician is dispatched to arrive within 4 hours.

#### 24x7x8: 8 Hour Onsite Response Time in 24x7 Service Window (requires Location Activation)

- 24 hours a day, 7 days a week, including nights and weekends
- Once the need for on-site presence is confirmed, an on-site technician is dispatched to arrive within 8 hours.

### **Priority Technical Support**

Lenovo's Priority Technical Support provides direct access to an advanced level technician supporting all of hardware, operating system and software needs related to server issues, available 24 hours a day, 7 days a week.

#### Keep Your Drive (KYD) Service

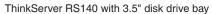
Retain drive (hard drive or SSD) and confidential data if the drive must be replaced. To confirm if 4hr services are available in a specified location, please use ThinkServer Service Availability Tool: http://www.lenovo.com/services\_warranty/us/en/locator.html Once purchased, to activate the location of your 4hr/8hr ThinkServer Service, please use ThinkServer Service Activation page: http://www.lenovo.com/activation

ThinkServer RS140 Product Specifications Reference (PSREF)











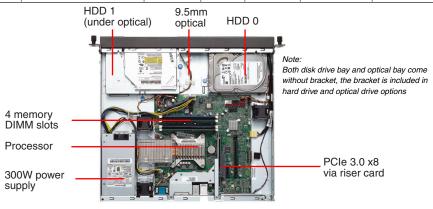
ThinkServer RS140 with 2.5" disk drive bay

# ThinkServer RS140 with 3.5" Disk Bay TopSeller Models - 70F9 (June 2014)

Type- model <sup>1</sup>	Processor (Core/GHz/Cache/Memory speed/Intel HD Graphics)	Memory	RAID controller	Pre-conf RAID	Storage	Optical	Discrete ethernet	Rail kit	Preloaded OS	Base warranty (-year, on-site)
70F90007UX	Core i3-4130 2C/3.4GHz/3MB/1600MHz/Intel HD 4400	1 x 4GB 1600MHz ECC	RAID 100	No	Open	DVD±RW 9.5mm	No	4-Post	No	1
70F90008UX	Xeon E3-1225 v3 4C/3.2GHz/8MB/1600MHz/Intel HD P4600	1 x 4GB 1600MHz ECC	RAID 100	No	Open	DVD±RW 9.5mm	No	4-Post	No	1
70F90009UX	Xeon E3-1245 v3 4C/3.4GHz/8MB/1600MHz/Intel HD P4600	1 x 4GB 1600MHz ECC	RAID 100	No	Open	DVD±RW 9.5mm	No	4-Post	No	1
	Core i3-4130 2C/3.4GHz/3MB/1600MHz/Intel HD 4400	1 x 4GB 1600MHz ECC	RAID 500	No	Open	DVD±RW 9.5mm	No	4-Post	No	1
70F9000BUX	Xeon E3-1225 v3 4C/3.2GHz/8MB/1600MHz/Intel HD P4600	1 x 4GB 1600MHz ECC	RAID 500	No	Open	DVD±RW 9.5mm	No	4-Post	No	1
	Xeon E3-1245 v3 4C/3.4GHz/8MB/1600MHz/Intel HD P4600	1 x 4GB 1600MHz ECC	RAID 500	No	Open	DVD±RW 9.5mm	No	4-Post	No	1
70F9000DUX	Xeon E3-1225 v3 4C/3.2GHz/8MB/1600MHz/Intel HD P4600	2 x 4GB 1600MHz ECC	RAID 500	No	Open	DVD±RW 9.5mm	No	4-Post	No	1

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Components	Specification
Mechanical	<ul> <li>1U rack with rail kit (2-post or 4-post, depending on models)</li> <li>16.9" W x 16.2" D x 1.71" H (with rack handles)</li> <li>430mm W x 411mm D x 43.5mm H (without foot)</li> <li>7.36 kg (16.2 lb) when fully configured</li> </ul>
Chipset	Intel C226 Chipset, one LGA1150 socket for processor
Processor (Xeon E3-12x6 v3 will be available until Sep 2014)	Supports one of the following, depending on models:  One quad-core Xeon E3-12x5 v3 processor (up to 4C/3.6GHz/8MB/1600MHz)  One quad-core Xeon E3-12x6 v3 processor (up to 4C/3.7GHz/8MB/1600MHz)  One dual-core Core i3 processor (up to 2C/3.7GHz/4MB/1600MHz)
Memory DIMMs	Four DDR3 DIMM slots, 2-channel (integrated memory controller in processor)
Memory type/capacity	1600MHz DDR3, UDIMM, ECC; 32GB max
RAID support	RAID 0, 1 with RAID 100, RAID 500, and RAID 700. Optional intelligent Battery Backup Unit (iBBU08) is available for the RAID 700. RAID 100 supports SATA 6.0Gb/s, RAID 500 and RAID 700 supports SATA 6.0Gb/s and SAS 6.0 Gb/s
Optical drive	Supports one 9.5mm optical drive on selected model
Disk drive bays	Up to two 3.5" hard drives, non-hot swap (see right)
Onboard network interfaces	Two Gigabit Ethernet ports by Intel I210 on riser card; one Gigabit Ethernet port by Intel I217, dedicate/share management
Expansion slot	One PCI-Express slot via riser card, half-length, full-height, PCIe 3.0 x8
Front ports	Two USB 2.0
Rear ports	Four USB 3.0, two USB 2.0, one serial (9-pin), two ethernet (RJ-45), one RJ-45 (dedicate/share mgmt), one VGA, one DisplayPort
Power supply	One fixed 300 watts power supply, 80-Plus Gold certified, non-hot swap
Systems management	<ul> <li>Intel Active Management Technology 9.1 on models with Xeon processor (KVM function needs Intel Xeon E3-12x5 v3/12x6 v3 processors)</li> <li>ThinkServer EasyStartup/EasyUpdate</li> </ul>
Security features	Power-on password, administrator password, and TPM (TCG 1.2-compliant)
Graphics	Integrated Intel HD Graphcis in processor
Operating systems supported	Microsoft Windows Server 2012 R2, 2012, and 2008 R2, Windows Small Business Server 2011, Red Hat Enterprise Linux 6.5, SUSE Linux Enterprise Server 11, VMware vSphere 5.5 (ESXi)
Declared Noise Emissions	Operating: < 5.2 Bels, Idle: < 5.0 Bels (Xeon E3-1225 v3/2 x 1TB 3.5" SATA/4GB x 1)
Limited warranty	1-year or 3-year limited onsite service. For more information and services upgrade options, please see: http://www.lenovo.com/services_warranty/us/en/lenovo-warranty.html
Temperature - operation	EO 0 E to 0 E 0 E (10 0 C to 2 E 0 C)

nttp://www.ienovo.com/services_warranty/us/en/ienovo-warranty.ntml						
Temperature - operating	50 °F to 95 °F (10 °C to 35 °C)					
Temperature - non operating (no package)	-10 °C to 60 °C					
Temperature - non operating (with package)	-40 °C to 70 °C					
Altitude - operating	Supported Altitude (unpressurized): 0-10000ft (0-3048m)					
Humidity - operating	10%~80%, non-condensing					
Humidity - non operating (no package)	10%~90%, non-condensing					
Humidity - non operating (with package)	10%~90%, non-condensing					



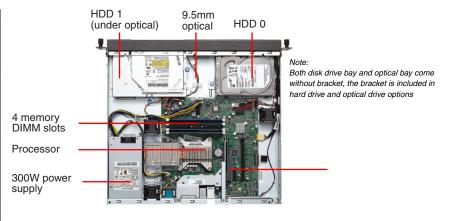
# Core Ontions for ThinkServer RS140 with 3.5" disk hav (partial)

Core Options	for IninkServer RS140 with 3.5" disk bay (partial)
Option	Description
4XB0F28664	ThinkServer 3.5" 500GB 7.2K Enterprise SATA 6Gbps Hard Drive for RS-Series
4XB0F28665	ThinkServer 3.5" 1TB 7.2K Enterprise SATA 6Gbps Hard Drive for RS-Series
4XB0F28666	ThinkServer 3.5" 2TB 7.2K Enterprise SATA 6Gbps Hard Drive for RS-Series
4XB0F28667	ThinkServer 3.5" 3TB 7.2K Enterprise SATA 6Gbps Hard Drive for RS-Series
	ThinkServer 3.5" 4TB 7.2K Enterprise SATA 6Gbps Hard Drive for RS-Series
	ThinkServer 3.5" 1TB 7.2K SAS 6Gbps Hard Drive for RS-Series
	ThinkServer 3.5" 2TB 7.2K SAS 6Gbps Hard Drive for RS-Series
4XB0F28671	ThinkServer 3.5" 3TB 7.2K SAS 6Gbps Hard Drive for RS-Series
	ThinkServer 2-Post Rail kit for RS-Series
4XF0F28772	ThinkServer 4-Post Rail kit for RS-Series
0C19498	2GB PC3-12800E 1600MHz DDR3 ECC-UDIMM
0C19499	4GB PC3-12800E 1600MHz DDR3 ECC-UDIMM
0C19500	8GB PC3-12800E 1600MHz DDR3 ECC-UDIMM
0A89464	ThinkServer RAID 500 Adapter
0A89463	ThinkServer RAID 700 Adapter
67Y2647	ThinkServer RAID 700 Battery
4XB0F28645	ThinkServer 9280-8e 6G HBA
0C19506	Ethernet Server Adapter Card Dual Port - I350-T2
0C19507	Ethernet Server Adapter Card Quad Port - I350-T4
0C19511	PCI-E to 2 Serial port card

# ThinkServer RS140 with 3.5" Disk Bay TopSeller Models - 70F9 (June 2014) - II

Type- model <sup>1</sup>	Processor (Core/GHz/Cache/Memory speed/Intel HD Graphics)	Memory	RAID controller	Pre-conf RAID	Storage	Optical	Discrete ethernet	Rail kit	Preloaded OS	Base warranty (-year, on-site)
	Xeon E3-1245 v3 4C/3.4GHz/8MB/1600MHz/Intel HD P4600	2 x 8GB 1600MHz ECC	RAID 500	No	Open	DVD±RW 9.5mm	No	4-Post	No	1
	Xeon E3-1225 v3 4C/3.2GHz/8MB/1600MHz/Intel HD P4600	2 x 4GB 1600MHz ECC	RAID 500	RAID 1	2 x 500GB 3.5" SATA 7.2K	DVD±RW 9.5mm	No	4-Post	2012 R2 Standard	1
	Xeon E3-1245 v3 4C/3.4GHz/8MB/1600MHz/Intel HD P4600	2 x 8GB 1600MHz ECC	RAID 500	RAID 1	2 x 500GB 3.5" SATA 7.2K	DVD±RW 9.5mm	No	4-Post	2012 R2 Standard	1
	Xeon E3-1225 v3 4C/3.2GHz/8MB/1600MHz/Intel HD P4600	2 x 4GB 1600MHz ECC	RAID 500	RAID 1	2 x 500GB 3.5" SATA 7.2K	DVD±RW 9.5mm	No	4-Post	2012 R2 Essentials	1

Components	Specification						
·	• 1U rack with rail kit (	2-post or 4-post, depending on models)					
Mechanical	• 16.9" W X 16.2" D X	<ul> <li>16.9" W x 16.2" D x 1.71" H (with rack handles)</li> <li>430mm W x 411mm D x 43.5mm H (without foot)</li> </ul>					
	• 7.36 kg (16.2 lb) who	en fully configured					
Chipset	Intel C226 Chipset, or	tel C226 Chipset, one LGA1150 socket for processor					
Processor	Supports one of the fo	ollowing, depending on models:					
(Xeon E3-12x6 v3 will be	<ul> <li>One quad-core Xeo</li> </ul>	n E3-12x5 v3 processor (up to 4C/3.6GHz/8MB/1600MHz)					
available until Sep 2014)	<ul> <li>One dual-core Core</li> </ul>	One quad-core Xeon E3-12x6 v3 processor (up to 4C/3.7GHz/8MB/1600MHz One dual-core Core i3 processor (up to 2C/3.7GHz/4MB/1600MHz)					
Memory DIMMs		ts, 2-channel (integrated memory controller in processor)					
Memory type/capacity	1600MHz DDR3, UDII	· · ·					
	RAID 0, 1 with RAID 1	100, RAID 500, and RAID 700.					
RAID support	Optional intelligent Ba	ttery Backup Unit (iBBU08) is available for the RAID 700. ATA 6.0Gb/s, RAID 500 and RAID 700 supports SATA					
	6.0Gb/s and SAS 6.0						
Optical drive		optical drive on selected model					
Disk drive bays	Up to two 3.5" hard drives, non-hot swap (see right)						
Onboard network	Two Gigabit Ethernet ports by Intel I210 on riser card;						
interfaces	one Gigabit Ethernet port by Intel I217, dedicate/share management						
Expansion slot	One PCI-Express slot via riser card, half-length, full-height, PCIe 3.0 x8						
Front ports	Two USB 2.0						
Rear ports	Four USB 3.0, two USB 2.0, one serial (9-pin), two ethernet (RJ-45), one RJ-45 (dedicate/share mgmt), one VGA, one DisplayPort						
Power supply	One fixed 300 watts power supply, 80-Plus Gold certified, non-hot swap						
Systems	<ul> <li>Intel Active Manage</li> </ul>	ment Technology 9.1 on models with Xeon processor					
management	(KVM function needs	eds Intel Xeon E3-12x5 v3/12x6 v3 processors)					
	ThinkServer EasySt						
Security features Graphics	Integrated Intel HD Gr	administrator password, and TPM (TCG 1.2-compliant)					
Graphics		erver 2012 R2, 2012, and 2008 R2,					
Operating systems		ess Server 2011, Red Hat Enterprise Linux 6.5,					
supported		USE Linux Enterprise Server 11, VMware vSphere 5.5 (ESXi)					
Declared Noise	Operating: < 5.2 Bels,						
Emissions		1TB 3.5" SATA/4GB x 1)					
	1-year or 3-year limite	d onsite service.					
Limited warranty		and services upgrade options, please see:					
		n/services_warranty/us/en/lenovo-warranty.html					
Temperature - operatin		50 °F to 95 °F (10 °C to 35 °C)					
Temperature - non ope		-10 °C to 60 °C					
Temperature - non ope	rating (with package)	-40 °C to 70 °C					
Altitude - operating		Supported Altitude (unpressurized): 0-10000ft (0-3048m)					
Humidity - operating	()	10%~80%, non-condensing					
Humidity - non operation		10%~90%, non-condensing					
Humidity - non operation	ig (with package)	10%~90%, non-condensing					



Option 4XB0F28664 4XB0F28665 4XB0F28666 4XB0F28666 4XB0F28666 4XB0F28666 4XB0F28666 4XB0F28666 4XB0F28666 4XB0F28667 4XB0F28667 4XB0F28667 4XB0F28667
4XB0F28665 ThinkServer 3.5" 1TB 7.2K Enterprise SATA 6Gbps Hard Drive for RS-Series 4XB0F28666 ThinkServer 3.5" 2TB 7.2K Enterprise SATA 6Gbps Hard Drive for RS-Series
4XB0F28665 ThinkServer 3.5" 1TB 7.2K Enterprise SATA 6Gbps Hard Drive for RS-Series 4XB0F28666 ThinkServer 3.5" 2TB 7.2K Enterprise SATA 6Gbps Hard Drive for RS-Series
4XB0F28667 ThinkServer 3.5" 3TB 7.2K Enterprise SATA 6Gbps Hard Drive for BS-Series
4XB0F28668 ThinkServer 3.5" 4TB 7.2K Enterprise SATA 6Gbps Hard Drive for RS-Series
4XB0F28669 ThinkServer 3.5" 1TB 7.2K SAS 6Gbps Hard Drive for RS-Series
4XB0F28670 ThinkServer 3.5" 2TB 7.2K SAS 6Gbps Hard Drive for RS-Series
4XB0F28671 ThinkServer 3.5" 3TB 7.2K SAS 6Gbps Hard Drive for RS-Series
4XF0F28767 ThinkServer 2-Post Rail kit for RS-Series
4XF0F28772 ThinkServer 4-Post Rail kit for RS-Series
0C19498 2GB PC3-12800E 1600MHz DDR3 ECC-UDIMM
0C19499 4GB PC3-12800E 1600MHz DDR3 ECC-UDIMM
0C19500 8GB PC3-12800E 1600MHz DDR3 ECC-UDIMM
0A89464 ThinkServer RAID 500 Adapter
0A89463 ThinkServer RAID 700 Adapter
67Y2647 ThinkServer RAID 700 Battery
4XB0F28645 ThinkServer 9280-8e 6G HBÁ
0C19506 Ethernet Server Adapter Card Dual Port - I350-T2
0C19507 Ethernet Server Adapter Card Quad Port - I350-T4
0C19511 PCI-E to 2 Serial port card

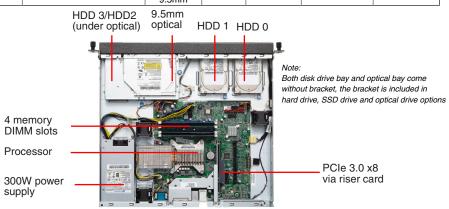
Type-model¹ (Core/GHz/Cache/Memory speed/Intel HD Graphics)  Announced June 2014 - 70F8		Memory	RAID controller	Pre-conf RAID	Storage	Optical	Discrete ethernet	Rail kit	Preloaded OS	Base warranty (-year, on-site)
70F80000UX	Xeon E3-1225 v3 4C/3.2GHz/8MB/1600MHz/Intel HD P4600	2 x 4GB 1600MHz ECC	RAID 100	No	Open	DVD±RW 9.5mm	No	4-Post	No	3
	Xeon E3-1245 v3 4C/3.4GHz/8MB/1600MHz/Intel HD P4600	2 x 8GB 1600MHz ECC	RAID 500	No	Open	DVD±RW 9.5mm	No	4-Post	No	3

# ThinkServer RS140 with 2.5" Disk Bay TopSeller Models - 70F3 (June 2014)

Type- model <sup>1</sup>	Processor (Core/GHz/Cache/Memory speed/Intel HD Graphics)	Memory	RAID controller	Pre-conf RAID	Storage	Optical	Discrete ethernet	Rail kit	Preloaded OS	Base warranty (-year, on-site)
70F30006UX	Core i3-4130 2C/3.4GHz/3MB/1600MHz/Intel HD 4400	1 x 4GB 1600MHz ECC	RAID 100	No	Open	DVD±RW 9.5mm	No	4-Post	No	1
70F30007UX	Xeon E3-1225 v3 4C/3.2GHz/8MB/1600MHz/Intel HD P4600	1 x 4GB 1600MHz ECC	RAID 100	No	Open	DVD±RW 9.5mm	No	4-Post	No	1
70F30008UX	Xeon E3-1245 v3 4C/3.4GHz/8MB/1600MHz/Intel HD P4600	1 x 4GB 1600MHz ECC	RAID 100	No	Open	DVD±RW 9.5mm	No	4-Post	No	1
70F30009UX	Xeon E3-1225 v3 4C/3.2GHz/8MB/1600MHz/Intel HD P4600	1 x 4GB 1600MHz ECC	RAID 500	No	Open	DVD±RW 9.5mm	No	4-Post	No	1
70F3000AUX	Xeon E3-1245 v3 4C/3.4GHz/8MB/1600MHz/Intel HD P4600	1 x 4GB 1600MHz ECC	RAID 500	No	Open	DVD±RW 9.5mm	No	4-Post	No	1
	Xeon E3-1245 v3 4C/3.4GHz/8MB/1600MHz/Intel HD P4600	1 x 8GB 1600MHz ECC	RAID 500 + upgrade key	No	Open	DVD±RW 9.5mm	No	4-Post	No	1
70F3000CUX	Xeon E3-1245 v3 4C/3.4GHz/8MB/1600MHz/Intel HD P4600	1 x 8GB 1600MHz ECC	RAID 700	No	Open	DVD±RW 9.5mm	No	4-Post	No	1

4C/3.4GHz	z/8MB/1600MHz/Intel HD P4600	1600MHz ECC						
Components	Specification							
Mechanical  • 1U rack with rail kit (2-post or 4-post, depending on models)  • 16.9" W x 16.2" D x 1.71" H (with rack handles)  • 430mm W x 411mm D x 43.5mm H (without foot)  • 6.85 kg (15.1 lb) when fully configured								
Chipset	Intel C226 Chipset, one LGA1150 socket for	ntel C226 Chipset, one LGA1150 socket for processor						
Processor (Xeon E3-12x6 v3 will be available until Sep 2014)	Supports one of the following, depending on models: One quad-core Xeon E3-12x5 v3 processor (up to 4C/3.6GHz/8MB/1600MHz) One quad-core Xeon E3-12x6 v3 processor (up to 4C/3.7GHz/8MB/1600MHz) One dual-core Core i3 processor (up to 2C/3.7GHz/4MB/1600MHz)							
Memory DIMMs	Four DDR3 DIMM slots, 2-channel (integrate	ed memory control	ler in processo	r)				
Memory type/capacity	1600MHz DDR3, UDIMM, ECC; 32GB max							
RAID support	RAID 0, 1, 5, 10 with RAID 100. RAID 0, 1, 1 RAID 0, 1, 5, 6, 10 with RAID 700. Optional of the RAID 500, Optional intelligent Battery for the RAID 700. RAID 100 supports SATA (supports SATA 6.0Gb/s and SAS 6.0 Gb/s	RAID 5 upgrade ke Backup Unit (iBB 3.0Gb/s, RAID 500	Ú08) is availab					
Optical drive	Supports one 9.5mm optical drive on selecte	ed model						
Disk drive bays	Up to four 2.5" hard drives, non-hot swap (se							
Onboard network interfaces	Two Gigabit Ethernet ports by Intel I210 on riser card; one Gigabit Ethernet port by Intel I217, dedicate/share management							
Expansion slot	One PCI-Express slot via riser card, half-len	gth, full-height, PC	le 3.0 x8					
Front ports	Two USB 2.0	-						
Rear ports	Four USB 3.0, two USB 2.0, one serial (9-pii one RJ-45 (dedicate/share mgmt), one VGA		RJ-45),					
Power supply	One fixed 300 watts power supply, 80-Plus 0	Gold certified, non-	hot swap					
Systems management	<ul> <li>Intel Active Management Technology 9.1 c (KVM function needs Intel Xeon E3-12x5 vi)</li> <li>ThinkServer EasyStartup/EasyUpdate</li> </ul>							
Security features	Power-on password, administrator password	, and TPM (TCG 1	1.2-compliant)					
Graphics	Integrated Intel HD Graphcis in processor							
Operating systems supported	Microsoft Windows Server 2012 R2, 2012, a Windows Small Business Server 2011, Red SUSE Linux Enterprise Server 11, VMware v	Hat Enterprise Lin						
Declared Noise Emissions	Operating: < 5.2 Bels, Idle: < 5.0 Bels (Xeon E3-1225 v3/2 x 1TB 3.5" SATA/4GB x	1)						
Limited warranty	1-year or 3-year limited onsite service. For more information and services upgrade http://www.lenovo.com/services_warranty/us							

maps, www.cocom, colvider_warranty, ac, on, to note warranty					
Temperature - operating	50 °F to 95 °F (10 °C to 35 °C)				
Temperature - non operating (no package)	-10 °C to 60 °C				
Temperature - non operating (with package)	-40 °C to 70 °C				
Altitude - operating	Supported Altitude (unpressurized): 0-10000ft (0-3048m)				
Humidity - operating	10%~80%, non-condensing				
Humidity - non operating (no package)	10%~90%, non-condensing				
Humidity - non operating (with package)	10%~90%, non-condensing				



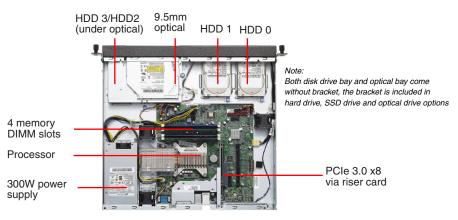
### Core Options for ThinkServer RS140 with 2.5" disk bay (partial)

•	
	Description
	ThinkServer 2.5" 300GB 10K SAS 6Gbps Hard Drive for RS-Series
	ThinkServer 2.5" 600GB 10K SAS 6Gbps Hard Drive for RS-Series
	ThinkServer 2.5" 900GB 10K SAS 6Gbps Hard Drive for RS-Series
	ThinkServer 2.5" 300GB 15K SAS 6Gbps Hard Drive for RS-Series
	ThinkServer 2.5" 500GB 7.2K Enterprise SATA 6Gbps Hard Drive for RS-Series
	ThinkServer 2.5" 1TB 7.2K Enterprise SATA 6Gbps Hard Drive for RS-Series
	ThinkServer 2.5" 120GB SATA 6Gbps Solid State Drive for RS-Series
	ThinkServer 2.5" 240GB SATA 6Gbps Solid State Drive for RS-Series
	ThinkServer 2.5" 480GB SATA 6Gbps Solid State Drive for RS-Series
	ThinkServer 2 Post Rail kit for RS-Series
	ThinkServer 4 Post Rail kit for RS-Series
0C19499	4GB PC3-12800E 1600MHz DDR3 ECC-UDIMM
0C19500	8GB PC3-12800E 1600MHz DDR3 ECC-UDIMM
0A89464	ThinkServer RAID 500 Adapter
0A89407	ThinkServer RAID 500 Upgrade Key for Advanced RAID
0A89463	ThinkServer RAID 700 Adapter
67Y2647	ThinkServer RAID 700 Battery
	ThinkServer 9280-8e 6G HBA
0C19506	Ethernet Server Adapter Card Dual Port - I350-T2
0C19507	Ethernet Server Adapter Card Quad Port - I350-T4
0C19511	PCI-E to 2 Serial port card

Type- model <sup>1</sup>	Processor (Core/GHz/Cache/Memory speed/Intel HD Graphics)	Memory	RAID controller	Pre-conf RAID	Storage	Optical	Discrete ethernet	Rail kit	Preloaded OS	Base warranty (-year, on-site)
	Xeon E3-1225 v3 4C/3.2GHz/8MB/1600MHz/Intel HD P4600	2 x 4GB 1600MHz ECC	RAID 500 + upgrade key	RAID 1	2 x 500GB 2.5" SATA 7.2K	DVD±RW 9.5mm	No	4-Post	2012 R2 Standard	1
	Xeon E3-1245 v3 4C/3.4GHz/8MB/1600MHz/Intel HD P4600	2 x 8GB 1600MHz ECC	RAID 700	RAID 5	4 x 500GB 2.5" SATA 7.2K	DVD±RW 9.5mm	No	4-Post	2012 R2 Standard	1

Components	Specification
Mechanical	<ul> <li>1U rack with rail kit (2-post or 4-post, depending on models)</li> <li>16.9" W x 16.2" D x 1.71" H (with rack handles)</li> <li>430mm W x 411mm D x 43.5mm H (without foot)</li> <li>6.85 kg (15.1 lb) when fully configured</li> </ul>
Chipset	Intel C226 Chipset, one LGA1150 socket for processor
Processor (Xeon E3-12x6 v3 will be available until Sep 2014)	Supports one of the following, depending on models:  One quad-core Xeon E3-12x5 v3 processor (up to 4C/3.6GHz/8MB/1600MHz)  One quad-core Xeon E3-12x6 v3 processor (up to 4C/3.7GHz/8MB/1600MHz)  One dual-core Core i3 processor (up to 2C/3.7GHz/4MB/1600MHz)
Memory DIMMs	Four DDR3 DIMM slots, 2-channel (integrated memory controller in processor)
Memory type/capacity	1600MHz DDR3, UDIMM, ECC; 32GB max
RAID support	RAID 0, 1, 5, 10 with RAID 100. RAID 0, 1, 10 with RAID 500. RAID 0, 1, 5, 6, 10 with RAID 700. Optional RAID 5 upgrade key is available for the RAID 500, Optional intelligent Battery Backup Unit (iBBU08) is available for the RAID 700. RAID 100 supports SATA 6.0Gb/s, RAID 500 and RAID 700 supports SATA 6.0Gb/s and SAS 6.0 Gb/s
Optical drive	Supports one 9.5mm optical drive on selected model
Disk drive bays	Up to four 2.5" hard drives, non-hot swap (see right)
Onboard network	Two Gigabit Ethernet ports by Intel I210 on riser card;
interfaces	one Gigabit Ethernet port by Intel I217, dedicate/share management
Expansion slot	One PCI-Express slot via riser card, half-length, full-height, PCIe 3.0 x8
Front ports	Two USB 2.0
Rear ports	Four USB 3.0, two USB 2.0, one serial (9-pin), two ethernet (RJ-45), one RJ-45 (dedicate/share mgmt), one VGA, one DisplayPort
Power supply	One fixed 300 watts power supply, 80-Plus Gold certified, non-hot swap
Systems management	<ul> <li>Intel Active Management Technology 9.1 on models with Xeon processor (KVM function needs Intel Xeon E3-12x5 v3/12x6 v3 processors)</li> <li>ThinkServer EasyStartup/EasyUpdate</li> </ul>
Security features	Power-on password, administrator password, and TPM (TCG 1.2-compliant)
Graphics	Integrated Intel HD Graphcis in processor
Operating systems supported	Microsoft Windows Server 2012 R2, 2012, and 2008 R2, Windows Small Business Server 2011, Red Hat Enterprise Linux 6.5, SUSE Linux Enterprise Server 11, VMware vSphere 5.5 (ESXi)
Declared Noise Emissions	Operating: < 5.2 Bels, Idle: < 5.0 Bels (Xeon E3-1225 v3/2 x 1TB 3.5" SATA/4GB x 1)
Limited warranty	1-year or 3-year limited onsite service. For more information and services upgrade options, please see: http://www.lenovo.com/services_warranty/us/en/lenovo-warranty.html
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nttp://www.ienovo.com/services_warranty/us/en/ienovo-warranty.ntmi					
Temperature - operating	50 °F to 95 °F (10 °C to 35 °C)				
Temperature - non operating (no package)	-10 °C to 60 °C				
Temperature - non operating (with package)	-40 °C to 70 °C				
Altitude - operating	Supported Altitude (unpressurized): 0-10000ft (0-3048m)				
Humidity - operating	10%~80%, non-condensing				
Humidity - non operating (no package)	10%~90%, non-condensing				
Humidity - non operating (with package)	10%~90%, non-condensing				



### Core Options for ThinkServer RS140 with 2.5" disk bay (partial)

ooic options	to Timikoci ver 110140 with 2:0 disk bay (partial)
Option 4XB0F28672 4XB0F28673 4XB0F28674 4XB0F28675 4XB0F28676 4XB0F28677 4XB0F28678 4XB0F28679 4XB0F28680 4XF0F28767	Description ThinkServer 2.5" 300GB 10K SAS 6Gbps Hard Drive for RS-Series ThinkServer 2.5" 600GB 10K SAS 6Gbps Hard Drive for RS-Series ThinkServer 2.5" 900GB 10K SAS 6Gbps Hard Drive for RS-Series ThinkServer 2.5" 300GB 15K SAS 6Gbps Hard Drive for RS-Series ThinkServer 2.5" 500GB 7.2K Enterprise SATA 6Gbps Hard Drive for RS-Series ThinkServer 2.5" 120GB SATA 6Gbps Solid State Drive for RS-Series ThinkServer 2.5" 120GB SATA 6Gbps Solid State Drive for RS-Series ThinkServer 2.5" 240GB SATA 6Gbps Solid State Drive for RS-Series ThinkServer 2.5" 480GB SATA 6Gbps Solid State Drive for RS-Series ThinkServer 2 Post Rail kit for RS-Series ThinkServer 4 Post Rail kit for RS-Series 4GB PC3-12800E 1600MHz DDR3 ECC-UDIMM 8GB PC3-12800E 1600MHz DDR3 ECC-UDIMM ThinkServer RAID 500 Adapter ThinkServer RAID 500 Upgrade Key for Advanced RAID ThinkServer RAID 700 Battery ThinkServer RAID 700 Battery ThinkServer 9280-8e 6G HBA
4XB0F28645 0C19506	ThinkServer 9280-8e 6G HBÁ Ethernet Server Adapter Card Dual Port - I350-T2
0C19507 0C19511	Ethernet Server Adapter Card Quad Port - I350-T4 PCI-E to 2 Serial port card
0019311	1 Of-L to 2 Genai port card

Type- model <sup>1</sup> Announced	Processor (Core/GHz/Cache/Memory speed/Intel HD Graphics) June 2014 - 70F2	Memory	RAID controller	Pre-conf RAID	Storage	Optical	Discrete ethernet	Rail kit	Preloaded OS	Base warranty (-year, on-site)
	Xeon E3-1225 v3 4C/3.2GHz/8MB/1600MHz/Intel HD P4600	2 x 4GB 1600MHz ECC	RAID 100	No	Open	No	No	4-Post	No	3
	Xeon E3-1245 v3 4C/3.4GHz/8MB/1600MHz/Intel HD P4600	2 x 8GB 1600MHz ECC	RAID 700	No	Open	No	No	4-Post	No	3

Type- model	Processor	2nd CPU	Memory	RAID controller	Disk bays	Disk drives	SD module	Optical	Slots	Discrete ethernet		Chassis intrusion switch	System mgmt	Power	Preloaded OS	Rack kit	Base wty
70D6001YUX	1xXeon E5-2603 v3 6C/ 1.6GHz/15MB/85W/1600MHz	4XG0F28848	1x4GB 2133MHz RDIMM	RAID110i	4x3.5" HS	Open	No SD module	DVD±RW	No	No	TPM	No	TSM	550Wx1 Platinum	No	Slide	3-year
	1xXeon E5-2609 v3 6C/ 1.9GHz/15MB/85W/1600MHz	4XG0F28847	1x8GB 2133MHz RDIMM	RAID110i	4x3.5" HS	Open	No SD module	DVD±RW	1	No	TPM	No	TSM	550Wx1 Platinum	No	Slide	3-year
1/0106002111X	1xXeon E5-2620 v3 6C/ 2.4GHz/15MB/85W/1866MHz	4XG0F28846	1x8GB 2133MHz RDIMM	RAID110i	4x3.5" HS	Open	No SD module	DVD±RW	1	No	TPM	No	TSM	550Wx1 Platinum	No	Slide	3-year

Components	Specification								
Form factor	1U rack	16							
	Up to two 105W Intel Xeon E5-2600 v3 family processors with 12 cores up to								
Processor	1.8 GHz, 10 cores up to 2.6 GHz, 8 cores up to 2.6 GHz, 6 cores up to 2.4 GHz,	E							
1 10000001	4 cores up to 3 GHz. Two QPI link up to 9.6 GT/s.	IJг							
	Up to 2133MHz memory speed. Up to 30MB cache	II.							
Memory DIMMs	16 DIMM sockets. 4 channels per processor, 2 DIMMs per channel.  RDIMM or LRDIMM (cannot be intermixed), DDR4, 2133MHz								
Memory capacity	256GB (RDIMM, 16GB x 16)/512GB (LRDIMM, 32GB x 16), 2nd CPU is needed								
	ECC, memory mirroring, lockstep, and memory sparing	۱Ľ							
Wiemery protoction	RAID 0, 1, 10 with embedded RAID 110i, 6Gb/s SATA, optional key for RAID5.	11							
	RAID 0, 1, 10 with RAID 500, PCIe adapter, 6Gb/s SAS/SATA,	$\  \ _{\perp}$							
DAID ournort	optional key for RAID5.	E							
RAID support	RAID 0, 1, 10, 5, 6 with RAID 710, PCIe adapter, 6Gb/s SAS/SATA, 1GB memory,	s							
	optional CacheVault flash cache with super capacitor, CacheCade Pro, or FastPath								
	upgrade key								
Disk drive bays	Up to 4 x 3.5" disk drive bays	١							
SD module	Optional SD module, supports up to 2 optional SDHC flash cards	]							
	3.5" SATA (7.2K 6Gbs HDD)   1TB/2TB/3TB/4TB/	-							
	3.5" SAS (7.2K 6Gbs HDD) 1TB/2TB/3TB/4TB/								
Internal atorogo	2.5" SAS SSD (12Gbs) 200GB/400GB/800GB	П							
	2.5" SATA SSD (6Gbs) 120GB/240GB/300GB/480GB/600GB/800GB	ı							
	SDHC flash card 8GB/32GB	-							
	Note: 1. SAS drive needs SAS adapter. 2. SDHC flash card needs SDHC flash memory module.								
Optical drive	3. On 3.5" models, 2.5" drive comes with a 3.5" carrier.  Optional one UltraSlim optical drive bay, supports DVD-ROM or DVD±RW	E							
Tape drive bays	No internal tape bay	Ų							
	One dedicated management port, two Gigabit Ethernet ports (RJ-45).	S							
Network interfaces	Supports optional discrete network adapters via PCIe slots	S							
	Power-on and administrator password. Optional Trusted Platform Module (TCG	c							
Security features	1.2-compliant). Optional chassis intrusion switch	4							
	Supports ThinkServer System Manager (TSM), optional TSM Premium.	4							
	UEFI. Onboard Aspeed AST2400 graphics/management processor,	4							
Customo	IPMI 2.0-compliant baseboard management controller (BMC).	4							
Systems	Control Panel LEDs shows the status of power, ID, network, system.	4							
management	Supports ThinkServer management software: Diagnostics, Deployment Manager,	4							
	Energy Manager, System Manager, Partner Pack for VMware vCenter and Microsoft	4							
	System Center Operations Manager, Power Planner	4							
	Up to two redundant hot-swap 450 W ac or 550 W ac or 750 W ac power supplies.	4							
Power supply	550 W is 80 PLUS Platinum qualified, 750 W is 80 PLUS Platinum or Titanium								
i owor cappry	qualified, 450 W is 80 PLUS Gold qualified. 750 W Titanium is 200V - 240V, others								
	are 110V - 240V	-							
Operating systems	Microsoft Windows Server 2012 R2/2012/2008 R2. Windows Small Business								
supported	Server 2011. Red Hat Enterprise Linux 6.5/6.6/7. SUSE Linux Enterprise Server 11.								
	VMware vSphere (ESXi) 5.1 P5/5.5 U2/6.0								
Rack kit	Optional slide or static rack kit on selected model	-							
Base warranty	1 or 3-year limited onsite service with 9x5/NBD.								
	Some parts are Customer Replaceable Units								

Components	Specification								
Graphics	Onboard Aspeed AST2400 with 1 one VGA on rear. Maximum resolution	6MB memory, one DisplayPort on ution: 1920x1200@60Hz	front,						
Front ports	Two USB 2.0, one DisplayPort								
Rear ports	One VGA, two USB 3.0, one RJ-45 (dedicated mgmt), two ethernet, one serial (9-pin)								
Cooling	6 (5+1, dual processors) or 4 (3+1, single processor) fans, non-hot swap								
Hot-swap parts	Disk drives, power supplies								
Noise emissions	Operating: < 6.5 Bels, Idle: < 5.4 Bels (Maximum configuration)								
	Temperature - operating	50 °F to 95 °F (10 °C to 35 °C)							
	Temperature - non operating (no package)	-10 °C to 60 °C							
Environmental	Temperature - non operating (with package)	-40 °C to 70 °C							
specification	Altitude - operating	(Unpressurized): 0-10000ft (0-3048m)							
	Humidity - operating	8%~90%, non-condensing							
	Humidity - storage (with package) 8%~90%, non-condensing								
Weight	Minimum configuration: 13 kg (28.66 lb), maximum: 19.1 kg (42.11 lb)								
Dimensions	Height: 43 mm (1.7 in), width: 482 mm (19 in), depth: 781.5 mm (30.77 in)								



#### **Expansion slots**

Up to 2 PCIe 3.0 slots via two optional riser cards.
Slot 1 (riser card 1): PCIe 3.0 x16, half length, full height, CPU1
Slot 2 (riser card 2): PCIe 3.0 x16, low-profile, half length, CPU2, requires 2nd riser card and 2nd CPU

#### Core options for ThinkServer RD350 (partial)

4X70F28590 16GB 2R x4 PC4-17000R RDIMM DDR4-2133 4Gbit 4X70F28591 32GB 4R x4 PC4-17000LR LRDIMM DDR4-2133 4Gbit 4X70F28591 32GB 4H X4 PC4-17000CH LHDIMM DDH4-2133 4Gbit
4XF0G45865 SDHC Flash Memory Module
4X70F28593 32GB SDHC Flash Memory card
4XB0F28690 Lenovo ThinkServer RAID110i Raid 5 Upgrade
4XB0G45759 ThinkServer RAID 500 Upgrade Key for Advanced RAID
4XF0G45867 ThinkServer System Manager Premium
4X20F28576 750W Titanium Hot Swap Power Supply
DisplayPort to VGA Dongle

Type- model	Processor	2nd CPU	Memory	RAID controller	Disk bays	Disk drives	SD module	Optical	Slots	Discrete ethernet		Chassis intrusion switch	System mgmt	Power	Preloaded OS	Rack kit	Base
70D60023UX	1xXeon E5-2650 v3 10C/ 2.3GHz/25MB/105W/2133MHz	4XG0F28843	1x8GB 2133MHz RDIMM	RAID110i	4x3.5" HS	Open	No SD module	DVD±RW	1	No	TPM	No	TSM	550Wx1 Platinum	No	Slide	3-year
70D60024UX	1xXeon E5-2660 v3 10C/ 2.6GHz/25MB/105W/2133MHz	4XG0F28842	1x8GB 2133MHz RDIMM	RAID110i	4x3.5" HS	Open	No SD module	DVD±RW	1	No	ТРМ	No	TSM	550Wx1 Platinum	No	Slide	3-year
70D60025UX	1xXeon E5-2603 v3 6C/ 1.6GHz/15MB/85W/1600MHz	4XG0F28848	1x8GB 2133MHz RDIMM	RAID110i	4x3.5" HS	Open	No SD module	DVD±RW	1	No	TPM	No	TSM	550Wx1 Platinum	No	Slide	3-year
70D60026UX	1xXeon E5-2630 v3 8C/ 2.4GHz/20MB/85W/1866MHz	4XG0F28845	1x8GB 2133MHz RDIMM	RAID110i	4x3.5" HS	Open	No SD module	DVD±RW	1	No	TPM	No	TSM	550Wx1 Platinum	No	Slide	3-year

Components	Specification								
Form factor	1U rack								
Processor	Up to two 105W Intel Xeon E								
Memory DIMMs		per processor, 2 DIMMs per channel. e intermixed), DDR4, 2133MHz							
Memory capacity	256GB (RDIMM, 16GB x 16)/9	512GB (LRDIMM, 32GB x 16), 2nd CPU is needed							
Memory protection		step, and memory sparing							
RAID support	RAID 0, 1, 10 with embedded RAID 110i, 6Gb/s SATA, optional key for RAID5.  RAID 0, 1, 10 with RAID 500, PCIe adapter, 6Gb/s SAS/SATA, optional key for RAID5.  RAID 0, 1, 10, 5, 6 with RAID 710, PCIe adapter, 6Gb/s SAS/SATA, 1GB memory, optional CacheVault flash cache with super capacitor, CacheCade Pro, or FastPath upgrade key								
Disk drive bays	Up to 4 x 3.5" disk drive bays								
SD module	Optional SD module, supports	s up to 2 optional SDHC flash cards							
Internal storage	3.5" SATA (7.2K 6Gbs HDD) 3.5" SAS (7.2K 6Gbs HDD) 2.5" SAS SSD (12Gbs) 2.5" SATA SSD (6Gbs) SDHC flash card	1TB/2TB/3TB/4TB/ 1TB/2TB/3TB/4TB/ 200GB/400GB/800GB 120GB/240GB/300GB/480GB/600GB/800GB 8GB/32GB 2 SDHC flash card needs SDHC flash memory module.							
Optical drive	3. On 3.5" models, 2,5" drive comes with	drive bay, supports DVD-ROM or DVD±RW							
Tape drive bays	No internal tape bay	unive day, supports DVD-now or DVD±nvv							
Network interfaces		port, two Gigabit Ethernet ports (RJ-45). work adapters via PCIe slots							
Security features	1.2-compliant), Optional chass	assword. Optional Trusted Platform Module (TCG sis intrusion switch							
Systems management	UEFI. Onboard Aspeed AST2 IPMI 2.0-compliant baseboard Control Panel LEDs shows the Supports ThinkServer manage Energy Manager, System Mar System Center Operations Ma								
Power supply	Up to two redundant hot-swap 450 W ac or 550 W ac or 750 W ac power supplies. 550 W is 80 PLUS Platinum qualified, 750 W is 80 PLUS Platinum or Titanium qualified, 450 W is 80 PLUS Gold qualified. 750 W Titanium is 200V - 240V, others are 110V - 240V								
Operating systems supported	Server 2011. Red Hat Enterpr	Microsoft Windows Server 2012 R2/2012/2008 R2. Windows Small Business Server 2011. Red Hat Enterprise Linux 6.5/6.6/7. SUSE Linux Enterprise Server 11. VMware vSphere (ESXi) 5.1 P5/5.5 U2/6.0							
Rack kit	Optional slide or static rack kit	on selected model							
Base warranty	1 or 3-year limited onsite serv Some parts are Customer Re								

Components	Specification									
Graphics	Onboard Aspeed AST2400 with 1 one VGA on rear. Maximum resol	6MB memory, one DisplayPort on ution: 1920x1200@60Hz	front,							
Front ports	Two USB 2.0, one DisplayPort									
Rear ports	One VGA, two USB 3.0, one RJ-45 (dedicated mgmt), two ethernet, one serial (9-pin)									
Cooling	6 (5+1, dual processors) or 4 (3+1, single processor) fans, non-hot swap									
Hot-swap parts	Disk drives, power supplies									
Noise emissions	Operating: < 6.5 Bels, Idle: < 5.4 Bels (Maximum configuration)									
	Temperature - operating	50 °F to 95 °F (10 °C to 35 °C)								
	Temperature - non operating (no package)	-10 °C to 60 °C								
Environmental	Temperature - non operating (with package)	-40 °C to 70 °C								
specification	Altitude - operating	(Unpressurized): 0-10000ft (0-3048m)								
	Humidity - operating	8%~90%, non-condensing								
	Humidity - storage (with package) 8%~90%, non-condensing									
Weight	Minimum configuration: 13 kg (28.66 lb), maximum: 19.1 kg (42.11 lb)									
Dimensions	Height: 43 mm (1.7 in), width: 482	mm (19 in), depth: 781.5 mm (30.	77 in)							



#### **Expansion slots**

Up to 2 PCle 3.0 slots via two optional riser cards.
Slot 1 (riser card 1): PCle 3.0 x16, half length, full height, CPU1
Slot 2 (riser card 2): PCle 3.0 x16, low-profile, half length, CPU2, requires 2nd riser card and 2nd CPU

#### Core options for ThinkServer RD350 (partial)

4X70F28590 16GB 2R x4 PC4-17000R RDIMM DDR4-2133 4Gbit 4X70F28591 32GB 4R x4 PC4-17000LR LRDIMM DDR4-2133 4Gbit

4XF0G45867
4XB0F28690
4XB0F28690
4XB0F28690
4XB0G45759
4XB0G45867
4XB0F28690
4XB0G45759
4XB0F28690
4XB0G45769
4XB0F28690
4XB0F28690
4XB0G45769
4XB0F28690
4XB0F286900

Type- model	Processor	2nd CPU	Memory	RAID controller	Disk Bays	Disk drives	M.2/SD module	Slots	Optical	Discrete ethernet	ТРМ	Chassis intrusion switch	System mgmt	Preloaded OS	Power	Base wty
70D60035UX	1xE5-2620 v3 6C/2.4GHz/ 15MB/85W/1866MHz	4XG0F28846	2x8GB 2133MHz RDIMM	RAID110i	4x3.5" HS	2x1TB 3.5" SATA6Gbs 7.2K	No	1	DVD±RW	No	TPM	No	TSM Premium	No	750Wx2 Platinum	3-year

Components	Specification	(						
Form factor	1U rack							
	Up to two 105W Intel Xeon E5-2600 v3 family processors with 12 cores up to	Ш						
Processor	1.8 GHz, 10 cores up to 2.6 GHz, 8 cores up to 2.6 GHz, 6 cores up to 2.4 GHz,	F						
1 10000001	4 cores up to 3 GHz. Two QPI link up to 9.6 GT/s.	IJг						
	Up to 2133MHz memory speed. Up to 30MB cache	JL						
Memory DIMMs	16 DIMM sockets. 4 channels per processor, 2 DIMMs per channel.  RDIMM or LRDIMM (cannot be intermixed), DDR4, 2133MHz	(						
Memory capacity	256GB (RDIMM, 16GB x 16)/512GB (LRDIMM, 32GB x 16), 2nd CPU is needed	ŀ						
	ECC, memory mirroring, lockstep, and memory sparing	1						
Memory protection	RAID 0, 1, 10 with embedded RAID 110i, 6Gb/s SATA, optional key for RAID5.	Ш						
	RAID 0, 1, 10 with RAID 500, PCIe adapter, 6Gb/s SAS/SATA,	I						
DAID .	optional key for RAID5.	E						
RAID support	RAID 0, 1, 10, 5, 6 with RAID 710, PCIe adapter, 6Gb/s SAS/SATA, 1GB memory,	8						
	optional CacheVault flash cache with super capacitor, CacheCade Pro, or FastPath							
	upgrade key							
Disk drive bays	Up to 4 x 3.5" disk drive bays	V						
SD module	Optional SD module, supports up to 2 optional SDHC flash cards							
	3.5" SATA (7.2K 6Gbs HDD)   1TB/2TB/3TB/4TB/	_						
nternal storage	3.5" SAS (7.2K 6Gbs HDD) 1TB/2TB/3TB/4TB/							
	2.5" SAS SSD (12Gbs) 200GB/400GB/800GB	1						
	2.5" SATA SSD (6Gbs) 120GB/240GB/300GB/480GB/600GB/800GB							
	SDHC flash card 8GB/32GB							
	Note: 1. SAS drive needs SAS adapter. 2. SDHC flash card needs SDHC flash memory module. 3. On 3.5" models, 2,5" drive comes with a 3.5" carrier.	۱_						
Optical drive	Optional one UltraSlim optical drive bay, supports DVD-ROM or DVD±RW	E						
Tape drive bays	No internal tape bay	S						
	One dedicated management port, two Gigabit Ethernet ports (RJ-45).	S						
Network interfaces	Supports optional discrete network adapters via PCIe slots							
Security features	Power-on and administrator password. Optional Trusted Platform Module (TCG	C						
Occurry leatures	1.2-compliant). Optional chassis intrusion switch	4						
	Supports ThinkServer System Manager (TSM), optional TSM Premium.	4						
	UEFI. Onboard Aspeed AST2400 graphics/management processor,	4						
Systems	IPMI 2.0-compliant baseboard management controller (BMC). Control Panel LEDs shows the status of power, ID, network, system.	4						
management	Supports ThinkServer management software: Diagnostics, Deployment Manager,	4   4						
	Energy Manager, System Manager, Partner Pack for VMware vCenter and Microsoft	4						
	System Center Operations Manager, Power Planner	4						
	Up to two redundant hot-swap 450 W ac or 550 W ac or 750 W ac power supplies.	4						
Power supply	550 W is 80 PLUS Platinum qualified, 750 W is 80 PLUS Platinum or Titanium							
l ower supply	qualified, 450 W is 80 PLUS Gold qualified. 750 W Titanium is 200V - 240V, others							
	are 110V - 240V							
Operating systems	Microsoft Windows Server 2012 R2/2012/2008 R2. Windows Small Business							
supported	Server 2011. Red Hat Enterprise Linux 6.5/6.6/7. SUSE Linux Enterprise Server 11.							
Dook kit	VMware vSphere (ESXi) 5.1 P5/5.5 U2/6.0 Optional slide or static rack kit on selected model							
Rack kit	1 or 3-year limited onsite service with 9x5/NBD.							
Base warranty	Some parts are Customer Replaceable Units							
	Come parts are dustomer riepiaceable office	i						

Components	Specification									
Graphics	Onboard Aspeed AST2400 with 1 one VGA on rear. Maximum resolu	6MB memory, one DisplayPort on fro ution: 1920x1200@60Hz	nt,							
Front ports	Two USB 2.0, one DisplayPort									
Rear ports	One VGA, two USB 3.0, one RJ-45 (dedicated mgmt), two ethernet, one serial (9-pin)									
Cooling	6 (5+1, dual processors) or 4 (3+1, single processor) fans, non-hot swap									
Hot-swap parts	Disk drives, power supplies	Disk drives, power supplies								
Noise emissions	Operating: < 6.5 Bels, Idle: < 5.4 Bels (Maximum configuration)									
	Temperature - operating 50 °F to 95 °F (10 °C to 35 °C)									
	Temperature - non operating (no package)	-10 °C to 60 °C								
Environmental	Temperature - non operating (with package)	-40 °C to 70 °C								
specification	Altitude - operating	(Unpressurized): 0-10000ft (0-3048m)								
	Humidity - operating	8%~90%, non-condensing								
	Humidity - storage (with package) 8%~90%, non-condensing									
Weight	Minimum configuration: 13 kg (28.66 lb), maximum: 19.1 kg (42.11 lb)									
Dimensions	Height: 43 mm (1.7 in), width: 482 mm (19 in), depth: 781.5 mm (30.77 in)									



#### **Expansion slots**

Up to 2 PCIe 3.0 slots via two optional riser cards.
Slot 1 (riser card 1): PCIe 3.0 x16, half length, full height, CPU1
Slot 2 (riser card 2): PCIe 3.0 x16, low-profile, half length, CPU2, requires 2nd riser card and 2nd CPU

#### Core options for ThinkServer RD350 (partial)

4X70F28590 16GB 2R x4 PC4-17000R RDIMM DDR4-2133 4Gbit 4X70F28591 32GB 4R x4 PC4-17000LR LRDIMM DDR4-2133 4Gbit

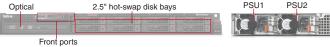
4XF0G45865 SDHC Flash Memory Module
4XF0G45865 SDHC Flash Memory Gard
4XB0F28690 Lenovo ThinkServer RAID110i Raid 5 Upgrade
4XB0G45759 ThinkServer RAID 500 Upgrade Key for Advanced RAID
4XF0G45867 ThinkServer System Manager Premium
4X20F28576 750 Titanium Hot Swap Power Supply
500F22820 750 Titanium Hot Swap Power Supply

## ThinkServer RD350 with 2.5" Disk Drive Bay - TopSeller - 70D8 (December 2014)

												Chassis					
Type-				RAID	Disk		SD			Discrete		intrusion	System		Preloaded		Base
model	Processor	2nd CPU	Memory	controller	bays	Disk drives	module	Optical	Slots	ethernet	TPM	switch	mgmt	Power	os	kit	wty
70D8001TUX	1xXeon E5-2603 v3 6C/ 1.6GHz/15MB/85W/1600MHz	4XG0F28848	1x4GB 2133MHz RDIMM	RAID110i	8x2.5" HS	Open	No SD module	DVD±RW	No	No	ТРМ	No	TSM	550Wx1 Platinum	No	Slide	3-year
70D8001UUX	1xXeon E5-2609 v3 6C/ 1.9GHz/15MB/85W/1600MHz	4XG0F28847	1x8GB 2133MHz RDIMM	RAID110i	8x2.5" HS	Open	No SD module	DVD±RW	1	No	ТРМ	No	TSM	550Wx1 Platinum	No	Slide	3-year
70D8001VUX	1xXeon E5-2620 v3 6C/ 2.4GHz/15MB/85W/1866MHz	4XG0F28846	1x8GB 2133MHz RDIMM	RAID110i	8x2.5" HS	Open	No SD module	DVD±RW	1	No	TPM	No	TSM	550Wx1 Platinum	No	Slide	3-year
70D8001WUX	1xXeon E5-2640 v3 8C/ 2.6GHz/20MB/90W/1866MHz	4XG0F28844	1x8GB 2133MHz RDIMM	RAID110i	8x2.5" HS	Open	No SD module	DVD±RW	1	No	ТРМ	No	TSM	550Wx1 Platinum	No	Slide	3-year

Components	Specification	(								
Form factor	1U rack									
	Up to two 105W Intel Xeon E5-2600 v3 family processors with 12 cores up to	Ш								
Processor	1.8 GHz, 10 cores up to 2.6 GHz, 8 cores up to 2.6 GHz, 6 cores up to 2.4 GHz,	F								
1 10063301	4 cores up to 3 GHz. Two QPI link up to 9.6 GT/s.	F								
	Up to 2133MHz memory speed. Up to 30MB cache	Ш								
Memory DIMMs	16 DIMM sockets. 4 channels per processor, 2 DIMMs per channel.	(								
	RDIMM or LRDIMM (cannot be intermixed), DDR4, 2133MHz	F								
Memory capacity	256GB (RDIMM, 16GB x 16)/512GB (LRDIMM, 32GB x 16), 2nd CPU is needed	n								
Memory protection	ECC, memory mirroring, lockstep, and memory sparing	ıГ								
	RAID 0, 1, 10 with embedded RAID 110i, 6Gb/s SATA, optional key for RAID5.	Ш								
	RAID 0, 1, 10 with RAID 500, PCIe adapter, 6Gb/s SAS/SATA,	lle								
RAID support	optional key for RAID5/50.	S								
z capport	RAID 0, 1, 10, 5, 50, 6, 60 with RAID 710, PCle adapter, 6Gb/s SAS/SATA, 1GB	`								
	memory, optional CacheVault flash cache with super capacitor, CacheCade Pro, or									
Diale deitra la sua	FastPath upgrade key	Ļ								
Disk drive bays	Up to 8 x 2.5" disk drive bays	١								
SD module	Optional SD module, supports up to 2 optional SDHC flash cards									
	2.5" SATA (7.2K 6Gbs HDD) 500GB/1TB									
	2.5" SAS (10K 6Gbs HDD) 300GB/600GB/900GB/1.2TB									
lateral stere	2.5" SAS (15K 6Gbs HDD) 146GB/300GB/450GB/600GB	ı								
Internal storage	2.5" SAS SSD (12Gbs) 200GB/400GB/800GB									
	2.5" SATA SSD (6Gbs) 120GB/240GB/300GB/480GB/600GB/800GB									
	SDHC flash card 8GB/32GB	E								
Optical drive	Note: 1. SAS drive needs SAS adapter. 2. SDHC flash card needs SDHC flash memory module.  Optional one UltraSlim optical drive bay, supports DVD-ROM or DVD±RW	ī								
Tape drive bays	1 7: 11	Š								
Tape unive bays	No internal tape bay	Š								
Network interfaces	One dedicated management port, two Gigabit Ethernet ports (RJ-45). Supports optional discrete network adapters via PCIe slots									
	Power-on and administrator password. Optional Trusted Platform Module (TCG	C								
Security features	1.2-compliant). Optional chassis intrusion switch	4								
	Supports ThinkServer System Manager (TSM), optional TSM Premium.	4								
	UEFI. Onboard Aspeed AST2400 graphics/management processor,	4								
C	IPMI 2.0-compliant baseboard management controller (BMC).	4								
Systems	Control Panel LEDs shows the status of power, ID, network, system.	4								
management	Supports ThinkServer management software: Diagnostics, Deployment Manager,	4								
	Energy Manager, System Manager, Partner Pack for VMware vCenter and Microsoft	4								
	System Center Operations Manager, Power Planner	4								
	Up to two redundant hot-swap 450 W ac or 550 W ac or 750 W ac power supplies.	4								
Power supply	550 W is 80 PLUS Platinum qualified, 750 W is 80 PLUS Platinum or Titanium									
l ower suppry	qualified, 450 W is 80 PLUS Gold qualified. 750 W Titanium is 200V - 240V, others									
	are 110V - 240V									
Operating systems	Microsoft Windows Server 2012 R2/2012/2008 R2. Windows Small Business									
supported	Server 2011. Neu nat Enterprise Linux 6.5/6.6/7. 303E Linux Enterprise Server 11.									
	VMware vSphere (ESXi) 5.1 P5/5.5 U2/6.0									
Rack kit	Optional slide or static rack kit on selected model									
Base warranty	1 or 3-year limited onsite service with 9x5/NBD.									
	Some parts are Customer Replaceable Units									

Components	Specification									
Graphics	Onboard Aspeed AST2400 with 1 one VGA on rear. Maximum resol	6MB memory, one DisplayPort on ution: 1920x1200@60Hz	front,							
Front ports	Two USB 2.0, one DisplayPort									
Rear ports	One VGA, two USB 3.0, one RJ-4 (9-pin)	One VGA, two USB 3.0, one RJ-45 (dedicated mgmt), two ethernet, one serial 9-pin)								
Cooling	6 (5+1, dual processors) or 4 (3+	6 (5+1, dual processors) or 4 (3+1, single processor) fans, non-hot swap								
Hot-swap parts	Disk drives, power supplies									
Noise emissions	Operating: < 6.5 Bels, Idle: < 5.4 Bels (Maximum configuration)									
	Temperature - operating	50 °F to 95 °F (10 °C to 35 °C)								
	Temperature - non operating (no package)	-10 °C to 60 °C								
Environmental	Temperature - non operating (with package)	-40 °C to 70 °C								
specification	Altitude - operating	(Unpressurized): 0-10000ft (0-3048m)								
'	Humidity - operating	8%~90%, non-condensing								
	Humidity - storage (with package)	8%~90%, non-condensing								
Weight	Minimum configuration: 13 kg (28	.66 lb), maximum: 19.1 kg (42.11 l	b)							
Dimensions	Height: 43 mm (1.7 in), width: 482 mm (19 in), depth: 781.5 mm (30.77 in)									





#### Expansion slots

Up to 2 PCIe 3.0 slots via two optional riser cards.
Slot 1 (riser card 1): PCIe 3.0 x16, half length, full height, CPU1
Slot 2 (riser card 2): PCIe 3.0 x16, low-profile, half length, CPU2, requires 2nd riser card and 2nd CPU

#### Core options for ThinkServer RD350 (partial)

4X70F28590 16GB 2R x4 PC4-17000R RDIMM DDR4-2133 4Gbit 4X70F28591 32GB 4R x4 PC4-17000LR LRDIMM DDR4-2133 4Gbit

4XF0G45865 SDHC Flash Memory Module 4X70F28593 32GB SDHC Flash Memory card

4XB0F28690 Lenovo ThinkServer RAID 110i Raid 5 Upgrade 4XB0G45759 ThinkServer RAID 500 Upgrade Key for Advanced RAID

4XF0G45867 ThinkServer System Manager Premium

4X20F28576 750W Titanium Hot Swap Power Supply

# ThinkServer RD350 with 2.5" Disk Drive Bay - TopSeller - 70D8 (December 2014) - II

T				DAID	Dist		CD.			Diagram		Chassis	0		Duals adad	D1	<b>D</b>
Type- model	Processor	2nd CPU	Memory	RAID controller	Disk bays	Disk drives	SD module	Optical	Slots	Discrete ethernet		intrusion switch	mgmt	Power	Preloaded OS	kit	wty
70D8001XUX	1xXeon E5-2650 v3 10C/ 2.3GHz/25MB/105W/2133MHz	4XG0F28843	1x8GB 2133MHz RDIMM	RAID110i	8x2.5" HS	Open	No SD module	DVD±RW	1	No	ТРМ	No	TSM	550Wx1 Platinum	No	Slide	3-year
1/01/18/00/1VIIX	1xXeon E5-2660 v3 10C/ 2.6GHz/25MB/105W/2133MHz	4XG0F28842	1x8GB 2133MHz RDIMM	RAID110i	8x2.5" HS	Open	No SD module	DVD±RW	1	No	ТРМ	No	TSM	550Wx1 Platinum	No	Slide	3-year
70D80020UX	1xXeon E5-2603 v3 6C/ 1.6GHz/15MB/85W/1600MHz	4XG0F28848	1x8GB 2133MHz RDIMM	RAID110i	8x2.5" HS	Open	No SD module	DVD±RW	1	No	ТРМ	No	TSM	550Wx1 Platinum	No	Slide	3-year
70D80021UX	1xXeon E5-2630 v3 8C/ 2.4GHz/20MB/85W/1866MHz	4XG0F28845	1x8GB 2133MHz RDIMM	RAID110i	8x2.5" HS	Open	No SD module	DVD±RW	1	No	ТРМ	No	TSM	550Wx1 Platinum	No	Slide	3-year

Components	Specification	
Form factor	1U rack	
Processor	Up to two 105W Intel Xeon E5-2600 v3 family processors with 12 cores up to 1.8 GHz, 10 cores up to 2.6 GHz, 8 cores up to 2.6 GHz, 6 cores up to 2.4 GHz, 4 cores up to 3 GHz. Two QPI link up to 9.6 GT/s. Up to 2133MHz memory speed. Up to 30MB cache	
Memory DIMMs	16 DIMM sockets. 4 channels per processor, 2 DIMMs per channel.  RDIMM or LRDIMM (cannot be intermixed), DDR4, 2133MHz	
Memory capacity	256GB (RDIMM, 16GB x 16)/512GB (LRDIMM, 32GB x 16), 2nd CPU is needed	]
Memory protection	ECC, memory mirroring, lockstep, and memory sparing	lŀ
RAID support	RAID 0, 1, 10 with embedded RAID 110i, 6Gb/s SATA, optional key for RAID5. RAID 0, 1, 10 with RAID 500, PCIe adapter, 6Gb/s SAS/SATA, optional key for RAID5/50. RAID 0, 1, 10, 5, 50, 6, 60 with RAID 710, PCIe adapter, 6Gb/s SAS/SATA, 1GB memory, optional CacheVault flash cache with super capacitor, CacheCade Pro, or FastPath upgrade key	
Disk drive bays	Up to 8 x 2.5" disk drive bays	11
SD module	Optional SD module, supports up to 2 optional SDHC flash cards	11
Internal storage	2.5" SATA (7.2K 6Gbs HDD)       500GB/1TB         2.5" SAS (10K 6Gbs HDD)       300GB/600GB/900GB/1.2TB         2.5" SAS (15K 6Gbs HDD)       146GB/300GB/450GB/600GB         2.5" SAS SSD (12Gbs)       200GB/400GB/800GB         2.5" SATA SSD (6Gbs)       120GB/240GB/300GB/480GB/600GB/800GB         SDHC flash card       8GB/32GB	
Outing Laberra	Note: 1. SAS drive needs SAS adapter. 2. SDHC flash card needs SDHC flash memory module.	ŀ
Optical drive	Optional one UltraSlim optical drive bay, supports DVD-ROM or DVD±RW	
Tape drive bays  Network interfaces	No internal tape bay  One dedicated management port, two Gigabit Ethernet ports (RJ-45).	3
Security features	Supports optional discrete network adapters via PCIe slots  Power-on and administrator password. Optional Trusted Platform Module (TCG 1.2-compliant). Optional chassis intrusion switch	2
Systems management	Supports ThinkServer System Manager (TSM), optional TSM Premium. UEFI. Onboard Aspeed AST2400 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC). Control Panel LEDs shows the status of power, ID, network, system. Supports ThinkServer management software: Diagnostics, Deployment Manager, Energy Manager, System Manager, Partner Pack for VMware vCenter and Microsoft System Center Operations Manager, Power Planner	
Power supply	Up to two redundant hot-swap 450 W ac or 550 W ac or 750 W ac power supplies. 550 W is 80 PLUS Platinum qualified, 750 W is 80 PLUS Platinum or Titanium qualified, 450 W is 80 PLUS Gold qualified. 750 W Titanium is 200V - 240V, others are 110V - 240V	
Operating systems supported	Microsoft Windows Server 2012 R2/2012/2008 R2. Windows Small Business Server 2011. Red Hat Enterprise Linux 6.5/6.6/7. SUSE Linux Enterprise Server 11. VMware vSphere (ESXi) 5.1 P5/5.5 U2/6.0	
Rack kit	Optional slide or static rack kit on selected model	
Base warranty	1 or 3-year limited onsite service with 9x5/NBD. Some parts are Customer Replaceable Units	

Components	Specification									
Graphics	Onboard Aspeed AST2400 with 1 one VGA on rear. Maximum resol	6MB memory, one DisplayPort on ution: 1920x1200@60Hz	front,							
Front ports	Two USB 2.0, one DisplayPort									
Rear ports	One VGA, two USB 3.0, one RJ-4 (9-pin)									
Cooling	6 (5+1, dual processors) or 4 (3+1, single processor) fans, non-hot swap									
Hot-swap parts	Disk drives, power supplies									
Noise emissions	Operating: < 6.5 Bels, Idle: < 5.4 Bels (Maximum configuration)									
	Temperature - operating	50 °F to 95 °F (10 °C to 35 °C)								
	Temperature - non operating (no package)	-10 °C to 60 °C								
Environmental	Temperature - non operating (with package)	-40 °C to 70 °C								
specification	Altitude - operating	(Unpressurized): 0-10000ft (0-3048m)								
	Humidity - operating	8%~90%, non-condensing								
	Humidity - storage (with package)	8%~90%, non-condensing								
Weight	Minimum configuration: 13 kg (28	.66 lb), maximum: 19.1 kg (42.11 lb	o)							
Dimensions	Height: 43 mm (1.7 in), width: 482 mm (19 in), depth: 781.5 mm (30.77 in)									



#### **Expansion slots**

Up to 2 PCIe 3.0 slots via two optional riser cards.
Slot 1 (riser card 1): PCIe 3.0 x16, half length, full height, CPU1
Slot 2 (riser card 2): PCIe 3.0 x16, low-profile, half length, CPU2, requires 2nd riser card and 2nd CPU

#### Core options for ThinkServer RD350 (partial)

4X70F28590 16GB 2R x4 PC4-17000R RDIMM DDR4-2133 4Gbit 4X70F28591 32GB 4R x4 PC4-17000LR LRDIMM DDR4-2133 4Gbit

4XF0G45865 SDHC Flash Memory Module 4X70F28593 32GB SDHC Flash Memory card

4XB0F28690 Lenovo ThinkServer RAID110i Raid 5 Upgrade 4XB0G45759 ThinkServer RAID 500 Upgrade Key for Advanced RAID

4XF0G45867 ThinkServer System Manager Premium

4X20F28576 750W Titanium Hot Swap Power Supply

4X90F92980 DisplayPort to VGA Dongle

Slot 2

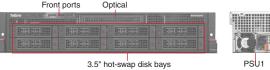
Slot 1

## ThinkServer RD450 with 3.5" Disk Drive Bay - TopSeller - 70DC (December 2014)

													Chassis					
Type-	_			RAID	Disk		SD module/		Tape		Discrete		intrusion	•	_	Preloaded		Base
model	Processor	2nd CPU	Memory	controller	bays	Disk drives	PCIe x8 SSD	Optical	drive	Slots	ethernet	TPM	switch	mgmt	Power	os	kit	wty
70DC001CUX	1xXeon E5-2603 v3 6C/ 1.6GHz/15MB/85W/1600MHz	4XG0F28860	1x4GB 2133MHz RDIMM	RAID110i	8x3.5" HS	Open	No/No	DVD±RW	None	No	No	ТРМ	No	TSM	550Wx1 Platinum	No	Slide	3-year
70DC001DUX	1xXeon E5-2609 v3 6C/ 1.9GHz/15MB/85W/1600MHz	4XG0F28859	1x8GB 2133MHz RDIMM	RAID110i	8x3.5" HS	Open	No/No	DVD±RW	None	2	No	TPM	No	TSM	550Wx1 Platinum	No	Slide	3-year
70DC001EUX			1x8GB 2133MHz RDIMM		8x3.5" HS	Open	No/No	DVD±RW	None	2	No	ТРМ	No	TSM	550Wx1 Platinum	No	Slide	3-year
1/()  )( ,()()   <b>F</b> ( ) X	1xVoon EE 0620 v2 00/	4VC0E29957	1v8GB	RAID110i	8x3.5" HS	Open	No/No	DVD±RW	None	2	No	ТРМ	No	TSM	550Wx1 Platinum	No	Slide	3-year
	1xXeon E5-2640 v3 8C/ 2.6GHz/20MB/90W/1866MHz	4XG0F28856	1x8GB 2133MHz RDIMM	RAID110i	8x3.5" HS	Open	No/No	DVD±RW	None	2	No	ТРМ	No	TSM	550Wx1 Platinum	No	Slide	3-year
0	0	A	- 0	! [ ]	41													

	Iz/20MB/90W/1866MHz 4XG0F28856	2133MHz RDIMM	RAID110i	HS	Open						
Components	Specification					(					
Form factor	2U rack										
Processor	Up to two 105W Intel Xeon E5-2 1.8 GHz, 10 cores up to 2.6 GHz, 4 cores up to 3 GHz. Two QPI link Up to 2133MHz memory speed. U	, 8 cores up to 2.0 c up to 9.6 GT/s.	6 GHz, 6 c			F					
Memory DIMMs	16 DIMM sockets. 4 channels per RDIMM or LRDIMM (cannot be in	processor, 2 DIM termixed), DDR4	MMs per ch , 2133MHz	Z		F					
Memory capacity	256GB (RDIMM, 16GB x 16)/5120	GB (LRDIMM, 32	2GB x 16),	2nd CPl	J is needed	N					
Memory protection	ECC, memory mirroring, lockstep.					ıl					
RAID support	RAID 0, 1, 10 with RAID 500, PC optional key for RAID5/50. RAID 0, 1, 10, 5, 50, 6, 60 with Ramemory, optional CacheVault flas	AID 0, 1, 10, 5, 50, 6, 60 with RAID 710, PCle adapter, 6Gb/s SAS/SATA, 1GB emory, optional CacheVault flash cache with super capacitor, CacheCade Pro, or astPath upgrade key									
Disk drive bays	Up to 8 x 3.5" disk drive bays					V					
SD module	Optional SD module, supports up	to 2 optional SD	HC flash c	ards							
	3.5" SATA (7.2K 6Gbs HDD)	1TB/2TB/3TB/4				-					
	3.5" SAS (7.2K 6Gbs HDD) 1TB/2TB/3TB/4TB/ 2.5" SAS SSD (12Gbs) 200GB/400GB/800GB										
	2.5" SATA SSD (6Gbs) PCIe SSD Adapter	120GB/240GB/3 1.6TB/3.2TB	300GB/480	)GB/600	GB/800GB						
	SDHC flash card  Note: 1. SAS drive needs SAS adapter. 2. SE 3. On 3.5" models, 2.5" drive comes with a 3.	.5" carrier.				E					
Optical drive	Optional one UltraSlim optical driv	/e bay, supports l	DVD-ROM	or DVD:	±RW	li					
Tape drive bays	No internal tape bay					S					
Network interfaces	One dedicated management port, Supports optional discrete network	k adapters via P	Cle slots			S					
Security features	Power-on and administrator passy 1.2-compliant). Optional chassis in	ntrusion switch			`	00000					
Systems management	Deports ThinkServer System Manager (TSM), optional TSM Premium.  UEFI. Onboard Aspeed AST2400 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC).  Control Panel LEDs shows the status of power, ID, network, system.  Supports ThinkServer management software: Diagnostics, Deployment Manager, Energy Manager, System Manager, Partner Pack for VMware vCenter and Microsof System Center Operations Manager, Power Planner										
Power supply	Up to two redundant hot-swap 450 W ac or 550 W ac or 750 W ac or 1100 W ac power supplies. 550 W and 1100 W are 80 PLUS Platinum qualified, 750 W is 80 PLUS Platinum or Titanium qualified, 450 W is 80 PLUS Gold qualified. 750 W Titanium is 200V - 240V, others are 110V - 240V										
Operating systems supported	Microsoft Windows Server 2012 R2/2012/2008 R2. Windows Small Business Server 2011. Red Hat Enterprise Linux 6.5/6.6/7. SUSE Linux Enterprise Server 11. VMware vSphere (ESXi) 5.1 P5/5.5 U2/6.0										
Rack kit	Optional slide or static rack kit on s					4					
Base warranty		tional slide or static rack kit on selected model  r 3-year limited onsite service with 9x5/NBD.  ne parts are Customer Replaceable Units									

Components	Specification									
Graphics	Onboard Aspeed AST2400 with 1	6MB memory, one DisplayPort on front,								
<u> </u>	one VGA on rear. Maximum resolu	ution: 1920x1200@60Hz								
Front ports	Two USB 2.0, one DisplayPort									
Rear ports		15 (dedicated mgmt), two ethernet, one serial								
ricai ports	(9-pin)									
Cooling	4 (3+1, dual processors) or 3 (2+	(3+1, dual processors) or 3 (2+1, single processor) fans, non-hot swap								
Hot-swap parts	Disk drives, power supplies									
Noise emissions	Operating: < 6.5 Bels, Idle: < 5.6 Bels (Maximum configuration)									
	Temperature - operating	50 °F to 95 °F (10 °C to 35 °C)								
	Temperature - non operating (no package)	-10 °C to 60 °C								
Environmental	Temperature - non operating (with package)	-40 °C to 70 °C								
specification	Altitude - operating	(Unpressurized): 0-10000ft (0-3048m)								
	Humidity - operating	8%~90%, non-condensing								
	Humidity - storage (with package) 8%~90%, non-condensing									
Weight	Minimum configuration: 16 kg (35	.3 lb), maximum: 27 kg (59.52 lb)								
Dimensions	Height: 87 mm (3.4 in), width: 482 mm (19 in), depth: 764 mm (30 in)									





### **Expansion slots**

Up to 6 PCIe 3.0 slots: one vertical onboard PCIe slot, up to 5 PCIe slots via two optional riser cards. Slot 1 (riser card 1): PCIe 3.0 x8, half length, full height, CPU1 Slot 2 (riser card 1): PCIe 3.0 x8, half length, full height, CPU1

Slot 3 (riser card 2): PCle 3.0 x8, low-profile, half length, CPU2, requires 2nd riser card and 2nd CPU Slot 4 (riser card 2): PCle 3.0 x8, low-profile, half length, CPU2, requires 2nd riser card and 2nd CPU Slot 5 (riser card 2): PCle 3.0 x8, low-profile, half length, CPU1, requires 2nd riser card and 2nd CPU

Slot 6 (onboard): PCIe 3.0 x16 (x8 elec), low-profile, half length, requires 2nd CPU Note: Although slot 5 connects to CPU1, slot 5 is supported on model with two processors and two riser cards only.

#### Core options for ThinkServer RD450 (partial)

4X70F28590 16GB DDR4-2133MHz (2Rx4) RDIMM 4X70F28591 32GB DDR4-2133MHz (4Rx4) LRDIMM 4XB0G45719 3.5" 4TB 7.2K Enterprise SAS 6Gbps Hot Swap Hard Drive

4XB0G45735 3.5" 800GB Enterprise Performance SAS 12Gbps Hot Swap Solid State Drive 4XB0G45747 3.5" 800GB Value Read-Optimized SATA 6Gbps Hot Swap Solid State Drive

4XB0F28662 3.2TB ioMemory SX300 Performance PCIe 2.0 SSD by FusionIO

4XF0G45865 SDHC Flash Assembly Module

4X70F28593 32GB SD Card

4XB0G45760 RD350,RD450 RAID 710 PCIe Adapter 4XF0G45867 ThinkServer System Manager Premium

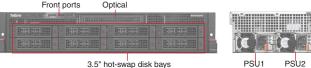
4X20F28576 750W Titanium Hot Swap Power Supply

### ThinkServer RD450 with 3.5" Disk Drive Bay - TopSeller - 70DC (December 2014) - II

													Chassis					
Type-				RAID	Disk		SD module/		Tape		Discrete		intrusion	System		Preloaded		Base
model	Processor	2nd CPU	Memory	controller	bays	Disk drives	PCIe x8 SSD	Optical	drive	Slots	ethernet	TPM	switch	mgmt	Power	os	kit	wty
	1xXeon E5-2650 v3 10C/ 2.3GHz/25MB/105W/2133MHz	4XG0F28855	1x8GB 2133MHz RDIMM	RAID110i	8x3.5" HS	Open	No/No	DVD±RW	None	2	No	ТРМ	No	TSM	550Wx1 Platinum	No	Slide	3-year
70DC001.ILIX	1vVoon EE 2660 v2 100/	4YG0E28854	1,000	RAID110i	8x3.5" HS	Open	No/No	DVD±RW	None	2	No	TPM	No	TSM	550Wx1 Platinum	No	Slide	3-year
70DC001KUX	1xXeon E5-2603 v3 6C/ 1.6GHz/15MB/85W/1600MHz	4XG0F28860	1x8GB 2133MHz RDIMM	RAID110i	8x3.5" HS	Open	No/No	DVD±RW	None	2	No	TPM	No	TSM	550Wx1 Platinum	No	Slide	3-year

Components	Specification								
Form factor	2U rack								
	Up to two 105W Intel Xeon E5-	2600 v3 family processors with 12 cores up to							
Processor		z, 8 cores up to 2.6 GHz, 6 cores up to 2.4 GHz,							
1 10003301	4 cores up to 3 GHz. Two QPI li								
	Up to 2133MHz memory speed								
Memory DIMMs		er processor, 2 DIMMs per channel.							
	RDIMM or LRDIMM (cannot be								
Memory capacity	,	2GB (LRDIMM, 32GB x 16), 2nd CPU is needed							
Memory protection	ECC, memory mirroring, lockste								
		AID 110i, 6Gb/s SATA, optional key for RAID5.							
	RAID 0, 1, 10 with RAID 500, P	Cie adapter, 6Gb/s SAS/SAIA,							
RAID support		pain 0, 1, 10 with half 500, Pole adapter, 605/5 SAS/SATA, optional key for RAID5/50.							
	RAID 0, 1, 10, 5, 50, 6, 60 with RAID 710, PCIe adapter, 6Gb/s SAS/SATA, 1GB nemory, optional CacheVault flash cache with super capacitor, CacheCade Pro, or								
	astPath upgrade key								
Disk drive bays	Up to 8 x 3.5" disk drive bays								
SD module		p to 2 optional SDHC flash cards							
3D IIIodule									
	3.5" SATA (7.2K 6Gbs HDD)	1TB/2TB/3TB/4TB/							
nternal storage	3.5" SAS (7.2K 6Gbs HDD)	1TB/2TB/3TB/4TB/							
	2.5" SAS SSD (12Gbs)	200GB/400GB/800GB 120GB/240GB/300GB/480GB/600GB/800GB							
	2.5" SATA SSD (6Gbs) PCIe SSD Adapter	1.6TB/3.2TB							
	SDHC flash card	8GB/32GB							
		SDHC flash card needs SDHC flash memory module.							
	3. On 3.5" models, 2,5" drive comes with a	3.5" carrier.							
Optical drive		rive bay, supports DVD-ROM or DVD±RW							
Tape drive bays	No internal tape bay								
Network interfaces	One dedicated management po								
TTO TWO THE THEO TO THE	Supports optional discrete netwo								
Security features		sword. Optional Trusted Platform Module (TCG							
<b>,</b>	1.2-compliant). Optional chassis								
		Manager (TSM), optional TSM Premium.  10 graphics/management processor,							
	IPMI 2.0-compliant baseboard n								
Systems		status of power, ID, network, system.							
management		nent software: Diagnostics, Deployment Manager,							
		ger, Partner Pack for VMware vCenter and Microsoft							
	System Center Operations Man								
		50 W ac or 550 W ac or 750 W ac or 1100 W ac							
Power supply	power supplies. 550 W and 1100	W are 80 PLUS Platinum qualified, 750 W is 80							
rower supply	PLUS Platinum or Titanium qual	ified, 450 W is 80 PLUS Gold qualified. 750 W							
	Titanium is 200V - 240V, others								
Operating system		R2/2012/2008 R2. Windows Small Business							
supported	Server 2011. Hed Hat Enterprise	e Linux 6.5/6.6/7. SUSE Linux Enterprise Server 11.							
	VMware vSphere (ESXi) 5.1 P5								
Rack kit	Optional slide or static rack kit or								
Base warranty	1 or 3-year limited onsite service								
	Some parts are Customer Repla	aceable Units							

Components	Specification									
Graphics	Onboard Aspeed AST2400 with 1 one VGA on rear. Maximum resol	6MB memory, one DisplayPort on front, ution: 1920x1200@60Hz								
Front ports	Two USB 2.0, one DisplayPort									
Rear ports	One VGA, two USB 3.0, one RJ-4 (9-pin)	One VGA, two USB 3.0, one RJ-45 (dedicated mgmt), two ethernet, one serial 9-pin)								
Cooling	4 (3+1, dual processors) or 3 (2+1, single processor) fans, non-hot swap									
Hot-swap parts	Disk drives, power supplies									
Noise emissions	Operating: < 6.5 Bels, Idle: < 5.6 Bels (Maximum configuration)									
	Temperature - operating	50 °F to 95 °F (10 °C to 35 °C)								
	Temperature - non operating (no package)	-10 °C to 60 °C								
Environmental	Temperature - non operating (with package)	-40 °C to 70 °C								
specification	Altitude - operating	(Unpressurized): 0-10000ft (0-3048m)								
'	Humidity - operating	8%~90%, non-condensing								
	Humidity - storage (with package)	8%~90%, non-condensing								
Weight	Minimum configuration: 16 kg (35	.3 lb), maximum: 27 kg (59.52 lb)								
Dimensions										
	Minimum configuration: 16 kg (35.3 lb), maximum: 27 kg (59.52 lb)  Height: 87 mm (3.4 in), width: 482 mm (19 in), depth: 764 mm (30 in)									





#### Expansion slots

Up to 6 PCle 3.0 slots: one vertical onboard PCle slot, up to 5 PCle slots via two optional riser cards. Slot 1 (riser card 1): PCle 3.0 x8, half length, full height, CPU1 Slot 2 (riser card 1): PCle 3.0 x8, half length, full height, CPU1

Slot 3 (riser card 2): PCle 3.0 x8, low-profile, half length, CPU2, requires 2nd riser card and 2nd CPU Slot 4 (riser card 2): PCle 3.0 x8, low-profile, half length, CPU2, requires 2nd riser card and 2nd CPU Slot 5 (riser card 2): PCle 3.0 x8, low-profile, half length, CPU1, requires 2nd riser card and 2nd CPU

Slot 6 (onboard): PCIe 3.0 x16 (x8 elec), low-profile, half length, requires 2nd CPU Note: Although slot 5 connects to CPU1, slot 5 is supported on model with two processors and two riser cards only.

#### Core options for ThinkServer RD450 (partial)

4X70F28590 16GB DDR4-2133MHz (2Rx4) RDIMM

4X70F28591 32GB DDR4-2133MHz (4Rx4) LRDIMM 4XB0G45719 3.5" 4TB 7.2K Enterprise SAS 6Gbps Hot Swap Hard Drive

4XB0G45735 3.5" 800GB Enterprise Performance SAS 12Gbps Hot Swap Solid State Drive 4XB0G45747 3.5" 800GB Value Read-Optimized SATA 6Gbps Hot Swap Solid State Drive

4XB0F28662 3.2TB ioMemory SX300 Performance PCIe 2.0 SSD by FusionIO 4XF0G45865 SDHC Flash Assembly Module

1X70F28593 32GB SD Card

4XB0G45760 RD350,RD450 RAID 710 PCIe Adapter 4XF0G45867 ThinkServer System Manager Premium

4X20F28576 750W Titanium Hot Swap Power Supply

### ThinkServer RD450 with 3.5" Disk Drive Bay - TopSeller - 70DC (February 2015)

Type- model	Processor	2nd CPU	Memory	RAID controller	Disk Bays	Disk drives	M.2/SD module	Slots	Optical	Discrete ethernet	ТРМ	Chassis intrusion switch	System mgmt	Preloaded OS	Power	Base wty
70DC002EUX	1xE5-2620 v3 6C/2.4GHz/ 15MB/85W/1866MHz	4XG0F28858	2x8GB 2133MHz RDIMM	RAID110i	8x3.5" HS	2x1TB 3.5" SATA6Gbs 7.2K	No	2	DVD±RW	No	TPM	No	TSM Premium	No	750Wx2 Platinum	3-year

Components	Specification	Components	Specification	
Form factor	2U rack	Graphics	Onboard Aspeed AST2400 with 1	6M
	Up to two 105W Intel Xeon E5-2600 v3 family processors with 12 cores up to	·	one VGA on rear. Maximum resol	utio
Processor	1.8 GHz, 10 cores up to 2.6 GHz, 8 cores up to 2.6 GHz, 6 cores up to 2.4 GHz,	Front ports	Two USB 2.0, one DisplayPort	
1 10003301	4 cores up to 3 GHz. Two QPI link up to 9.6 GT/s. Up to 2133MHz memory speed. Up to 30MB cache	Rear ports	One VGA, two USB 3.0, one RJ-4 (9-pin)	5 (
Marrager DIMMa	16 DIMM sockets. 4 channels per processor, 2 DIMMs per channel.	Cooling	4 (3+1, dual processors) or 3 (2+	1. s
Memory DIMINS	RDIMM or LRDIMM (cannot be intermixed), DDR4, 2133MHz	Hot-swap parts	Disk drives, power supplies	-, -
Memory capacity	256GB (RDIMM, 16GB x 16)/512GB (LRDIMM, 32GB x 16), 2nd CPU is needed	Noise emissions	Operating: < 6.5 Bels, Idle: < 5.6	Bels
Memory protection	ECC, memory mirroring, lockstep, and memory sparing		Temperature - operating	50 °
	RAID 0, 1, 10 with embedded RAID 110i, 6Gb/s SATA, optional key for RAID5.		Temperature - non operating (no package)	-10
	RAID 0, 1, 10 with RAID 500, PCIe adapter, 6Gb/s SAS/SATA,	Environmental	Temperature - non operating (with package)	-40
RAID support	optional key for RAID5/50.	specification	Altitude - operating	(Un
l sapport	RAID 0, 1, 10, 5, 50, 6, 60 with RAID 710, PCIe adapter, 6Gb/s SAS/SATA, 1GB	opcomoditori	Humidity - operating	8%
I	memory, optional CacheVault flash cache with super capacitor, CacheCade Pro, or FastPath upgrade key		Humidity - storage (with package)	8%
Diek drive have	Up to 8 x 3.5" disk drive bays	Weight	Minimum configuration: 16 kg (35	
	Optional SD module, supports up to 2 optional SDHC flash cards	Dimensions	Height: 87 mm (3.4 in), width: 482	
3D IIIOdule	, 11	Diffictions	Height. 67 Hill (3.4 III), Width. 462	. 1111
	3.5" SATA (7.2K 6Gbs HDD) 1TB/2TB/3TB/4TB/ 3.5" SAS (7.2K 6Gbs HDD) 1TB/2TB/3TB/4TB/	Front ports	Optical	
	2.5" SAS SSD (12Gbs) 200GB/400GB/800GB	Distance		
Internal atorogo	2.5" SATA SSD (12Gbs) 200GB/400GB/300GB/480GB/600GB			Щ
rocessor 21 rocessor 4 lemory DIMMs R lemory capacity 24 lemory protection E R R R AID support 9 isk drive bays U D module 0 D module 0 prical drive ape drive bays etwork interfaces S ecurity features 1 ystems canagement S supported V prepared systems supported V prepared systems S protection E R R R R R R R R R R R R R R R R R R R	PCIe SSD Adapter 1.6TB/3.2TB			3
	SDHC flash card 8GB/32GB	NAME OF TAXABLE PARTY O	Too I	- 6
	Note: 1. SAS drive needs SAS adapter. 2. SDHC flash card needs SDHC flash memory module.		3.5" hot-swap disk bays	PSU1
Optical drive	3. On 3.5" models, 2.5" drive comes with a 3.5" carrier.  Optional one UltraSlim optical drive bay, supports DVD-ROM or DVD±RW	Expansion slots		
	No internal tape bay		ots: one vertical onboard PCIe slot,	
Tape unive bays	One dedicated management port, two Gigabit Ethernet ports.		PCle 3.0 x8, half length, full heigh	
Network interfaces	Supports optional discrete network adapters via PCIe slots		PCIe 3.0 x8, half length, full heigh	
	Power-on and administrator password. Optional Trusted Platform Module (TCG		PCIe 3.0 x8, low-profile, half length PCIe 3.0 x8, low-profile, half length	
Security features	1.2-compliant). Optional chassis intrusion switch		PCIe 3.0 x8, low-profile, half length	
	Supports ThinkServer System Manager (TSM), optional TSM Premium.	Slot 6 (onboard):	PCIe 3.0 x16 (x8 elec), low-profile	
	UEFI. Onboard Aspeed AST2400 graphics/management processor,		nects to CPU1, slot 5 is supported on model v	
Systems	IPMI 2.0-compliant baseboard management controller (BMC).	0	ThinkComes DD450 (nortial)	
	Control Panel LEDs shows the status of power, ID, network, system.		hinkServer RD450 (partial)	
	Supports ThinkServer management software: Diagnostics, Deployment Manager,	4X70F28590 16G	B DDR4-2133MHz (2Rx4) RDIMM	
	Energy Manager, System Manager, Partner Pack for VMware vCenter and Microsoft		iB DDR4-2133MHz (4Rx4) LRDIM	
	System Center Operations Manager, Power Planner Up to two redundant hot-swap 450 W ac or 550 W ac or 750 W ac or 1100 W ac		4TB 7.2K Enterprise SAS 6Gbps 800GB Enterprise Performance S	
I	power supplies, 550 W and 1100 W are 80 PLUS Platinum qualified, 750 W is 80		800GB Value Read-Optimized SA	
Power supply	PLUS Platinum or Titanium qualified, 450 W is 80 PLUS Gold qualified. 750 W		B ioMemory SX300 Performance	
	Titanium is 200V - 240V, others are 110V - 240V		C Flash Assembly Module	. 01
Onerating avetage	Microsoft Windows Server 2012 R2/2012/2008 R2. Windows Small Business	4X70F28593 32G		
	Server 2011. Red Hat Enterprise Linux 6.5/6.6/7. SUSE Linux Enterprise Server 11.		350,RD450 RAID 710 PCIe Adapte	r
Supported	VMware vSphere (ESXi) 5.1 P5/5.5 U2/6.0	4XF0G45867 Thin	ıkServer System Manager Premiur	m
Rack kit	Optional slide or static rack kit on selected model		W Titanium Hot Swap Power Supp	ly
Base warranty	1 or 3-year limited onsite service with 9x5/NBD.	4X90F92980 Disp	playPort to VGA Dongle	
_ass manumy	Some parts are Customer Replaceable Units			

Components	Specification									
Graphics	Onboard Aspeed AST2400 with a one VGA on rear. Maximum resol	6MB memory, one DisplayPort on front, ution: 1920x1200@60Hz								
Front ports	Two USB 2.0, one DisplayPort									
Rear ports	One VGA, two USB 3.0, one RJ-4 (9-pin)	One VGA, two USB 3.0, one RJ-45 (dedicated mgmt), two ethernet, one serial (9-pin)								
Cooling	4 (3+1, dual processors) or 3 (2+	4 (3+1, dual processors) or 3 (2+1, single processor) fans, non-hot swap								
Hot-swap parts	Disk drives, power supplies									
Noise emissions	Operating: < 6.5 Bels, Idle: < 5.6 Bels (Maximum configuration)									
	Temperature - operating	50 °F to 95 °F (10 °C to 35 °C)								
	Temperature - non operating (no package)	-10 °C to 60 °C								
Environmental	Temperature - non operating (with package)	-40 °C to 70 °C								
specification	Altitude - operating	(Unpressurized): 0-10000ft (0-3048m)								
	Humidity - operating	8%~90%, non-condensing								
	Humidity - storage (with package)	8%~90%, non-condensing								
Weight	Minimum configuration: 16 kg (35.3 lb), maximum: 27 kg (59.52 lb)									
Dimensions	Height: 87 mm (3.4 in), width: 482 mm (19 in), depth: 764 mm (30 in)									
1	•	•								





#### Expansion slots

Up to 6 PCle 3.0 slots: one vertical onboard PCle slot, up to 5 PCle slots via two optional riser cards. Slot 1 (riser card 1): PCle 3.0 x8, half length, full height, CPU1 Slot 2 (riser card 1): PCle 3.0 x8, half length, full height, CPU1

Slot 3 (riser card 2): PCle 3.0 x8, low-profile, half length, CPU2, requires 2nd riser card and 2nd CPU Slot 4 (riser card 2): PCle 3.0 x8, low-profile, half length, CPU2, requires 2nd riser card and 2nd CPU Slot 5 (riser card 2): PCle 3.0 x8, low-profile, half length, CPU1, requires 2nd riser card and 2nd CPU

Slot 6 (onboard): PCIe 3.0 x16 (x8 elec), low-profile, half length, requires 2nd CPU Note: Although slot 5 connects to CPU1, slot 5 is supported on model with two processors and two riser cards only.

4X70F28590 16GB DDR4-2133MHz (2Rx4) RDIMM 4X70F28591 32GB DDR4-2133MHz (4Rx4) LRDIMM 4XB0G45719 3.5" 4TB 7.2K Enterprise SAS 6Gbps Hot Swap Hard Drive 4XB0G45735 3.5" 800GB Enterprise Performance SAS 12Gbps Hot Swap Solid State Drive 4XB0G45747 3.5" 800GB Value Read-Optimized SATA 6Gbps Hot Swap Solid State Drive 4XB0F28662 3.2TB ioMemory SX300 Performance PCIe 2.0 SSD by FusionIO XF0G45865 SDHC Flash Assembly Module 1X70F28593 32GB SD Card 4XB0G45760 RD350,RD450 RAID 710 PCIe Adapter 4XF0G45867 ThinkServer System Manager Premium

Type-					Disk		SD module/		Таре		Discrete		Chassis intrusion	System		Preloaded	Rack	Base
model	Processor	2nd CPU	Memory	AnyRAID	bays	Disk drives	PCIe x8 SSD	Optical	drive	Slots	ethernet	TPM	switch	mgmt	Power	os	kit	wty
70DA000XUX	1xXeon E5-2603 v3 6C/ 1.6GHz/15MB/85W/1600MHz	4XG0F28860	1x4GB 2133MHz RDIMM	110i	8x2.5" HS	Open	No/No	DVD±RW	No	No	No	TPM	No	TSM	550Wx1 Platinum	No	Slide	3-year
70DA000YUX	1xXeon E5-2609 v3 6C/ 1.9GHz/15MB/85W/1600MHz	4XG0F28859	1x8GB 2133MHz RDIMM	110i	8x2.5" HS	Open	No/No	DVD±RW	No	2	No	ТРМ	No	TSM	550Wx1 Platinum	No	Slide	3-year
1/()  )\(\D()\(\D()\(\D()\(\D()\)	1xXeon E5-2620 v3 6C/ 2.4GHz/15MB/85W/1866MHz	4XG0F28858	1x8GB 2133MHz RDIMM	110i	8x2.5" HS	Open	No/No	DVD±RW	No	2	No	TPM	No	TSM	550Wx1 Platinum	No	Slide	3-year
Ι/()ΙΙΙΔ()()1111Υ	1xXeon E5-2630 v3 8C/ 2.4GHz/20MB/85W/1866MHz	4XG0F28857	1x8GB 2133MHz RDIMM	110i	8x2.5" HS	Open	No/No	DVD±RW	No	2	No	ТРМ	No	TSM	550Wx1 Platinum	No	Slide	3-year

Components	Specification								
Form factor	2U rack								
Processor	Up to two 105W Intel Xeon E								
Memory DIMMs	16 DIMM sockets. 4 channels RDIMM or LRDIMM (cannot be	per processor, 2 DIMMs per channel. e intermixed), DDR4, 2133MHz							
Memory capacity	256GB (RDIMM, 16GB x 16)/512GB (LRDIMM, 32GB x 16), 2nd CPU is needed								
Memory protection	ECC, memory mirroring, locks	ECC, memory mirroring, lockstep, and memory sparing							
AnyRAID support	Supports AnyRAID 110i/510i/720i/720ix for 8 x 2.5" model, 720ix for 16 or 24x 2.5" model. RAID 0, 1, 10 with AnyRAID 110i. 6Gb/s SATA, optional key for RAID 5. RAID 0, 1, 10 with AnyRAID 510i, 6Gb/s SAS/SATA, optional key for RAID 5/50. RAID 0, 1, 10, 5, 50, 6, 60 with AnyRAID 720i/720ix. 12Gb/s SAS/SATA. 720i needs cache for RAID 6/60 support. 720ix must have a cache. Optional cache for 720i/720ix: 1GB read-only memory. 1GB/2GB/4GB flash with								
Disk drive bays	super capacitor. Flash options include CacheVault, CacheCade Pro, and FastPath Up to 8 x 2.5" (Bay 0-7) disk drive bays, or up to 16 x 2.5" (Bay 0-15) disk drive bays, or up to 24 x 2.5" (Bay 0-23) disk drive bays (see right)								
SD module	Optional SD module, supports up to 2 optional SDHC flash cards								
Internal storage	2.5" SATA (7.2K 6Gbs HDD) 2.5" SAS (10K 6Gbs HDD) 2.5" SAS (15K 6Gbs HDD) 2.5" SAS SSD (12Gbs) 2.5" SATA SSD (6Gbs) Tape drive PCIe SSD Adapter SDHC flash card Note: 1. SAS drive needs SAS adapter.	300GB/600GB/900GB/1.2TB 146GB/300GB/450GB/600GB 200GB/400GB/800GB 120GB/240GB/300GB/480GB/600GB/800GB 2.5TB 1.6TB/3.2TB 8GB/32GB 2. SDHC flash card needs SDHC flash memory module.							
Optical drive	supports DVD-ROM or DVD±I								
Tape drive bays	AnyRAID 720ix is needed	ernal SAS tape drive. 8 x 2.5" model only.							
Network interfaces	Supports optional discrete ne								
Security features	1.2-compliant). Optional chass	assword. Optional Trusted Platform Module (TCG sis intrusion switch							
Systems management	Supports ThinkServer System Manager (TSM), optional TSM Premium.  UEFI. Onboard Aspeed AST2400 graphics/management processor,  IPMI 2.0-compliant baseboard management controller (BMC).  Control Panel LEDs shows the status of power, ID, network, system.  Supports ThinkServer management software: Diagnostics, Deployment Manager,  Energy Manager, System Manager, Partner Pack for VMware vCenter and Microsoft  System Center Operations Manager, Power Planner								
Power supply	power supplies. 550 W and 11 PLUS Platinum or Titanium qu	0 450 W ac or 550 W ac or 750 W ac or 1100 W ac 00 W are 80 PLUS Platinum qualified, 750 W is 80 ualified, 450 W is 80 PLUS Gold qualified. 750 W rs are 110V - 240V. 450 W is supported on 8 x 2.5"							

	Components	Specification									
-	Operating systems	Business Server 2011, Windows Multipoint Server 2012. Red Hat E	R2, 2012, and 2008 R2, Windows Small Server Storage 2012 R2 and 2012, Windows Enterprise Linux 7.0 and 6.5. SUSE Linux re vSphere (ESXi) 5.1 P5 and 5.5 U2								
	Rack kit	Optional slide or static rack kit on selected model									
]	Base warranty	or 3-year limited onsite service with 9x5/NBD. Some parts are Customer Replaceable Units									
1	Graphics	Onboard Aspeed AST2400 with 16MB memory, one DisplayPort on front, one VGA on rear. Maximum resolution: 1920x1200@60Hz									
1	Front ports	Two USB 2.0, one DisplayPort									
	Rear ports	One VGA, two USB 3.0, one RJ-45 (dedicated mgmt), two ethernet, one serial (9-pin)									
	Cooling	4 (3+1, dual processors) or 3 (2+1, single processor) fans, non-hot swap									
1	Hot-swap parts	Disk drives, power supplies									
	Noise emissions	Operating: < 6.5 Bels, Idle: < 5.6 I	Bels (Maximum configuration)								
		Temperature - operating	50 °F to 95 °F (10 °C to 35 °C)								
┨		Temperature - non operating (no package)	-10 °C to 60 °C								
	Environmental	Temperature - non operating (with package)	-40 °C to 70 °C								
┨	specification	Altitude - operating	(Unpressurized): 0-10000ft (0-3048m)								
┨		Humidity - operating	8%~90%, non-condensing								
		Humidity - storage (with package)	8%~90%, non-condensing								
	Weight	Minimum configuration: 16 kg (35.3 lb), maximum: 27 kg (59.52 lb)									
	Dimensions	Height: 87 mm (3.4 in), width: 482 mm (19 in), depth: 764 mm (30 in)									
1											

2 4 5 PSU1 PSU2 Rear ports

**Expansion slots** 

Up to 6 PCle 3.0 slots: one vertical onboard PCle slot, up to 5 PCle slots via two optional riser cards. Slot 1 (riser card 1): PCle 3.0 x8, half length, full height, CPU1 Slot 2 (riser card 1): PCle 3.0 x8, half length, full height, CPU1

Slot 3 (riser card 2): PCle 3.0 x8, low-profile, half length, CPU2, requires 2nd riser card and 2nd CPU Slot 4 (riser card 2): PCle 3.0 x8, low-profile, half length, CPU2, requires 2nd riser card and 2nd CPU Slot 4 (riser card 2): PCle 3.0 x8, low-profile, half length, CPU2, requires 2nd riser card and 2nd CPU Slot 5 (riser card 2): PCle 3.0 x8, low-profile, half length, CPU1, requires 2nd riser card and 2nd CPU

Slot 6 (onboard): PCIe 3.0 x16 (x8 elec), low-profile, half length, requires 2nd CPU Note: Although slot 5 connects to CPU1, slot 5 is supported on model with two processors and two riser cards only.

#### Core options for ThinkServer RD450 (partial)

4X70F28590 16GB DDR4-2133MHz (2Rx4) RDIMM

4XB0F28662 3.2TB ioMemory SX300 Performance PCle 2.0 SSD by FusionIO

4XF0G45866 LTO-6 Linear Tape Drive Kit by Tandberg

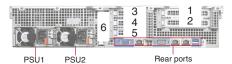
4XB0G45757 Lenovo ThinkServer RD450 Raid 720ix AnyRAID Adapter with Expander 4XF0G45867 ThinkServer System Manager Premium

4X20F28576 750W Titanium Hot Swap Power Supply 4X90F92980 DisplayPort to VGA Dongle

Type- model	Processor	2nd CPU	Memory	AnyRAID	Disk bays	Disk drives	SD module/ PCle x8 SSD	Optical	Tape drive	Slots	Discrete ethernet		Chassis intrusion switch	System mgmt	Power	Preloaded OS	Rack kit	Base wty
	1xXeon E5-2640 v3 8C/ 2.6GHz/20MB/90W/1866MHz	4XG0F28856	1x8GB 2133MHz RDIMM	110i	8x2.5" HS	Open	No/No	DVD±RW	No	2	No	TPM	No		550Wx1 Platinum	No	Slide	3-year
	1xXeon E5-2660 v3 10C/ 2.6GHz/25MB/105W/2133MHz	4XG0F28854	1x8GB 2133MHz RDIMM	110i	8x2.5" HS	Open	No/No	DVD±RW	No	2	No	TPM	No		550Wx1 Platinum	No	Slide	3-year
70DA0014UX	1xXeon E5-2603 v3 6C/ 1.6GHz/15MB/85W/1600MHz	4XG0F28860	1x8GB 2133MHz RDIMM	110i	8x2.5" HS	Open	No/No	No	No	2	No	TPM	No	TSM	550Wx1 Platinum	No	Slide	3-year

Components	Specification						
Form factor	2U rack						
Processor	Up to two <b>105W Intel Xeon E5-2600 v3</b> family processors with 12 cores up to 1.8 GHz, 10 cores up to 2.6 GHz, 8 cores up to 2.6 GHz, 6 cores up to 2.4 GHz,						
1 10000001	4 cores up to 3 GHz. Two QPI link up to 9.6 GT/s. Up to 2133MHz memory speed. Up to 30MB cache						
Memory DIMMs	16 DIMM sockets. 4 channels per processor, 2 DIMMs per channel.  RDIMM or LRDIMM (cannot be intermixed), DDR4, 2133MHz						
Memory capacity	56GB (RDIMM, 16GB x 16)/512GB (LRDIMM, 32GB x 16), 2nd CPU is needed						
Memory protection	ECC, memory mirroring, lockstep, and memory sparing						
AnyRAID support	Supports AnyRAID 110i/510i/720i/720ix for 8 x 2.5" model, 720ix for 16 or 24x 2.5" model.  RAID 0, 1, 10 with AnyRAID 110i. 6Gb/s SATA, optional key for RAID 5.  RAID 0, 1, 10 with AnyRAID 510i, 6Gb/s SAS/SATA, optional key for RAID 5/50.  RAID 0, 1, 10, 5, 50, 6, 60 with AnyRAID 720i/720ix. 12Gb/s SAS/SATA. 720i needs cache for RAID 6/60 support. 720ix must have a cache.  Optional cache for 720i/720ix: 1GB read-only memory. 1GB/2GB/4GB flash with super capacitor. Flash options include CacheVault, CacheCade Pro, and FastPath						
Disk drive bays	Up to 8 x 2.5" (Bay 0-7) disk drive bays, or up to 16 x 2.5" (Bay 0-15) disk drive bays, or up to 24 x 2.5" (Bay 0-23) disk drive bays (see right)	1					
SD module	Optional SD module, supports up to 2 optional SDHC flash cards	5					
Internal storage	2.5" SATA (7.2K 6Gbs HDD)     500GB/1TB       2.5" SAS (10K 6Gbs HDD)     300GB/600GB/900GB/1.2TB       2.5" SAS (15K 6Gbs HDD)     146GB/300GB/450GB/600GB       2.5" SAS SSD (12Gbs)     200GB/400GB/800GB       2.5" SATA SSD (6Gbs)     120GB/240GB/300GB/480GB/600GB/800GB       Tape drive     2.5TB	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \					
Optical drive	PĆIe SSD Adapter 1.6TB/3.2TB  SDHC flash card 8GB/32GB  Note: 1. SAS drive needs SAS adapter. 2. SDHC flash card needs SDHC flash memory module.  Optional one UltraSlim optical drive bay on 8 and 16 x 2.5" bays model, supports DVD-ROM or DVD±RW	- 1					
Tape drive bays	Supports up to one LTO-6 internal SAS tape drive. 8 x 2.5" model only.  AnyRAID 720ix is needed	E					
Network interfaces	One dedicated management port, two Gigabit Ethernet ports. Supports optional discrete network adapters via PCIe slots	9					
Security features	Power-on and administrator password. Optional Trusted Platform Module (TCG 1.2-compliant). Optional chassis intrusion switch						
Systems management	UEFI. Onboard Aspeed AST2400 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC). Control Panel LEDs shows the status of power, ID, network, system. Supports ThinkServer management software: Diagnostics, Deployment Manager, Energy Manager, System Manager, Partner Pack for VMware vCenter and Microsoft System Center Operations Manager. Power Planner						
Power supply	Up to two redundant hot-swap 450 W ac or 550 W ac or 750 W ac or 1100 W ac power supplies. 550 W and 1100 W are 80 PLUS Platinum qualified, 750 W is 80 PLUS Platinum or Titanium qualified, 450 W is 80 PLUS Gold qualified. 750 W Titanium is 200V - 240V, others are 110V - 240V. 450 W is supported on 8 x 2.5" models only						

Components	Specification									
Operating systems supported	Business Server 2011, Windows Multipoint Server 2012. Red Hat E	R2, 2012, and 2008 R2, Windows Small Server Storage 2012 R2 and 2012, Window Enterprise Linux 7.0 and 6.5. SUSE Linux re vSphere (ESXi) 5.1 P5 and 5.5 U2	vs							
Rack kit	ptional slide or static rack kit on selected model									
Base warranty	or 3-year limited onsite service with 9x5/NBD. Some parts are Customer Replaceable Units									
Graphics	Onboard Aspeed AST2400 with 16MB memory, one DisplayPort on front, ne VGA on rear. Maximum resolution: 1920x1200@60Hz									
Front ports	wo USB 2.0, one DisplayPort									
Rear ports	One VGA, two USB 3.0, one RJ-45 (dedicated mgmt), two ethernet, one serial (9-pin)									
Cooling	4 (3+1, dual processors) or 3 (2+1, single processor) fans, non-hot swap									
Hot-swap parts	Disk drives, power supplies									
Noise emissions	Operating: < 6.5 Bels, Idle: < 5.6 I	Bels (Maximum configuration)								
	Temperature - operating	50 °F to 95 °F (10 °C to 35 °C)								
	Temperature - non operating (no package)	-10 °C to 60 °C								
Environmental	Temperature - non operating (with package)	-40 °C to 70 °C								
specification	Altitude - operating	(Unpressurized): 0-10000ft (0-3048m)								
'	Humidity - operating	8%~90%, non-condensing								
	Humidity - storage (with package)	8%~90%, non-condensing								
Weight	Minimum configuration: 16 kg (35.3 lb), maximum: 27 kg (59.52 lb)									
Dimensions	Height: 87 mm (3.4 in), width: 482 mm (19 in), depth: 764 mm (30 in)									



#### Expansion slots

Up to 6 PCle 3.0 slots: one vertical onboard PCle slot, up to 5 PCle slots via two optional riser cards. Slot 1 (riser card 1): PCle 3.0 x8, half length, full height, CPU1 Slot 2 (riser card 1): PCle 3.0 x8, half length, full height, CPU1

Slot 3 (riser card 2): PCIe 3.0 x8, low-profile, half length, CPU2, requires 2nd riser card and 2nd CPU Slot 4 (riser card 2): PCIe 3.0 x8, low-profile, half length, CPU2, requires 2nd riser card and 2nd CPU Slot 5 (riser card 2): PCle 3.0 x8, low-profile, half length, CPU1, requires 2nd riser card and 2nd CPU

Slot 6 (onboard): PCIe 3.0 x16 (x8 elec), low-profile, half length, requires 2nd CPU

Note: Although slot 5 connects to CPU1, slot 5 is supported on model with two processors and two riser cards only.

### Core options for ThinkServer RD450 (partial)

4X70F28590 16GB DDR4-2133MHz (2Rx4) RDIMM

4XB0F28662 3.2TB ioMemory SX300 Performance PCIe 2.0 SSD by FusionIO

4XF0G45866 LTO-6 Linear Tape Drive Kit by Tandberg

4XB0G45757 Lenovo ThinkServer RD450 Raid 720ix AnyRAID Adapter with Expander 4XF0G45867 ThinkServer System Manager Premium

4X20F28576 750W Titanium Hot Swap Power Supply

Type- model	Processor	2nd CPU	Memory	AnyRAID	Disk bays	Disk drives	SD module/ PCle x8 SSD	Optical	Tape drive	Slots	Discrete ethernet		Chassis intrusion switch	System mgmt	Power	Preloaded OS	Rack kit	Base wty
70DV0008UX	1xXeon E5-2603 v3 6C/ 1.6GHz/15MB/85W/1600MHz	4XG0F28860	1x4GB 2133MHz RDIMM	720ix +1GB RAM	16x2.5" HS	Open	No/No	No	None	No	No	TPM	No	TSM	750Wx1 Platinum	No	Slide	3-year
	1xXeon E5-2620 v3 +6C/ 2.4GHz/15MB/85W/1866MHz	4XG0F28858	1x8GB 2133MHz RDIMM	720ix +1GB RAM	16x2.5" HS	Open	No/No	No	None	2	No	TPM	No		750Wx1 Platinum	No	Slide	3-year
	14 V FF 0040 0 00/		1x8GB 2133MHz RDIMM	700'	16x2.5" HS	Open	No/No	No	None	2	No	TPM	No	TSM	750Wx1 Platinum	No	Slide	3-year

Components	Specification								
Form factor	2U rack								
Processor	Up to two 105W Intel Xeon E								
Memory DIMMs	16 DIMM sockets. 4 channels RDIMM or LRDIMM (cannot be	per processor, 2 DIMMs per channel. e intermixed), DDR4, 2133MHz							
Memory capacity	256GB (RDIMM, 16GB x 16)/512GB (LRDIMM, 32GB x 16), 2nd CPU is needed								
Memory protection	ECC, memory mirroring, locks	ECC, memory mirroring, lockstep, and memory sparing							
AnyRAID support	Supports AnyRAID 110i/510i/720i/720ix for 8 x 2.5" model, 720ix for 16 or 24x 2.5" model. RAID 0, 1, 10 with AnyRAID 110i. 6Gb/s SATA, optional key for RAID 5. RAID 0, 1, 10 with AnyRAID 510i, 6Gb/s SAS/SATA, optional key for RAID 5/50. RAID 0, 1, 10, 5, 50, 6, 60 with AnyRAID 720i/720ix. 12Gb/s SAS/SATA. 720i needs cache for RAID 6/60 support. 720ix must have a cache. Optional cache for 720i/720ix: 1GB read-only memory. 1GB/2GB/4GB flash with								
Disk drive bays	super capacitor. Flash options include CacheVault, CacheCade Pro, and FastPath Up to 8 x 2.5" (Bay 0-7) disk drive bays, or up to 16 x 2.5" (Bay 0-15) disk drive bays, or up to 24 x 2.5" (Bay 0-23) disk drive bays (see right)								
SD module	Optional SD module, supports up to 2 optional SDHC flash cards								
Internal storage	2.5" SATA (7.2K 6Gbs HDD) 2.5" SAS (10K 6Gbs HDD) 2.5" SAS (15K 6Gbs HDD) 2.5" SAS SSD (12Gbs) 2.5" SATA SSD (6Gbs) Tape drive PCIe SSD Adapter SDHC flash card Note: 1. SAS drive needs SAS adapter.	300GB/600GB/900GB/1.2TB 146GB/300GB/450GB/600GB 200GB/400GB/800GB 120GB/240GB/300GB/480GB/600GB/800GB 2.5TB 1.6TB/3.2TB 8GB/32GB 2. SDHC flash card needs SDHC flash memory module.							
Optical drive	supports DVD-ROM or DVD±I								
Tape drive bays	AnyRAID 720ix is needed	ernal SAS tape drive. 8 x 2.5" model only.							
Network interfaces	Supports optional discrete ne								
Security features	1.2-compliant). Optional chass	assword. Optional Trusted Platform Module (TCG sis intrusion switch							
Systems management	Supports ThinkServer System Manager (TSM), optional TSM Premium.  UEFI. Onboard Aspeed AST2400 graphics/management processor,  IPMI 2.0-compliant baseboard management controller (BMC).  Control Panel LEDs shows the status of power, ID, network, system.  Supports ThinkServer management software: Diagnostics, Deployment Manager,  Energy Manager, System Manager, Partner Pack for VMware vCenter and Microsoft  System Center Operations Manager, Power Planner								
Power supply	power supplies. 550 W and 11 PLUS Platinum or Titanium qu	0 450 W ac or 550 W ac or 750 W ac or 1100 W ac 00 W are 80 PLUS Platinum qualified, 750 W is 80 ualified, 450 W is 80 PLUS Gold qualified. 750 W rs are 110V - 240V. 450 W is supported on 8 x 2.5"							

Components	Specification									
Operating systems supported	Business Server 2011, Windows Multipoint Server 2012. Red Hat E	R2, 2012, and 2008 R2, Windows Small Server Storage 2012 R2 and 2012, Window Enterprise Linux 7.0 and 6.5. SUSE Linux re vSphere (ESXi) 5.1 P5 and 5.5 U2	/S							
Rack kit	ptional slide or static rack kit on selected model									
Base warranty	or 3-year limited onsite service with 9x5/NBD. Some parts are Customer Replaceable Units									
Graphics	Onboard Aspeed AST2400 with 16MB memory, one DisplayPort on front, ne VGA on rear. Maximum resolution: 1920x1200@60Hz									
Front ports	wo USB 2.0, one DisplayPort									
Rear ports	One VGA, two USB 3.0, one RJ-45 (dedicated mgmt), two ethernet, one serial (9-pin)									
Cooling	4 (3+1, dual processors) or 3 (2+1, single processor) fans, non-hot swap									
Hot-swap parts	Disk drives, power supplies									
Noise emissions	Operating: < 6.5 Bels, Idle: < 5.6 I	Bels (Maximum configuration)								
	Temperature - operating	50 °F to 95 °F (10 °C to 35 °C)								
	Temperature - non operating (no package)	-10 °C to 60 °C								
Environmental	Temperature - non operating (with package)	-40 °C to 70 °C								
specification	Altitude - operating (Unpressurized): 0-10000ft (0-3048m)									
1 .	Humidity - operating	8%~90%, non-condensing								
	Humidity - storage (with package)	8%~90%, non-condensing								
Weight	Minimum configuration: 16 kg (35.3 lb), maximum: 27 kg (59.52 lb)									
Dimensions	Height: 87 mm (3.4 in), width: 482 mm (19 in), depth: 764 mm (30 in)									



**Expansion slots** 

Up to 6 PCle 3.0 slots: one vertical onboard PCle slot, up to 5 PCle slots via two optional riser cards. Slot 1 (riser card 1): PCle 3.0 x8, half length, full height, CPU1 Slot 2 (riser card 1): PCle 3.0 x8, half length, full height, CPU1

Slot 3 (riser card 2): PCle 3.0 x8, low-profile, half length, CPU2, requires 2nd riser card and 2nd CPU Slot 4 (riser card 2): PCle 3.0 x8, low-profile, half length, CPU2, requires 2nd riser card and 2nd CPU Slot 4 (riser card 2): PCle 3.0 x8, low-profile, half length, CPU2, requires 2nd riser card and 2nd CPU

Slot 5 (riser card 2): PCle 3.0 x8, low-profile, half length, CPU1, requires 2nd riser card and 2nd CPU Slot 6 (onboard): PCIe 3.0 x16 (x8 elec), low-profile, half length, requires 2nd CPU

Note: Although slot 5 connects to CPU1, slot 5 is supported on model with two processors and two riser cards only.

#### Core options for ThinkServer RD450 (partial)

4X70F28590 16GB DDR4-2133MHz (2Rx4) RDIMM

4XB0F28662 3.2TB ioMemory SX300 Performance PCle 2.0 SSD by FusionIO

4XF0G45866 LTO-6 Linear Tape Drive Kit by Tandberg

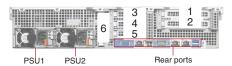
4XB0G45757 Lenovo ThinkServer RD450 Raid 720ix AnyRAID Adapter with Expander

4XF0G45867 ThinkServer System Manager Premium 4X20F28576 750W Titanium Hot Swap Power Supply 4X90F92980 DisplayPort to VGA Dongle

Type- model	Processor	2nd CPU	Memory	AnyRAID	Disk bays	Disk drives	SD module/ PCle x8 SSD	Optical	Tape drive	Slots	Discrete ethernet		Chassis intrusion switch	System mgmt	Power	Preloaded OS	Rack kit	Base wty
	1xXeon E5-2650 v3 10C/ 2.3GHz/25MB/105W/2133MHz	4XG0F28855	1x16GB 2133MHz RDIMM	720ix +1GB RAM	24x2.5" HS	Open	No/No	None	None	2	No	TPM	Switch	TSM Premium	750Wx1 Platinum	No	Slide	3-year
70DE000CUX	2xXeon E5-2620 v3 6C/ 2.4GHz/15MB/85W/1866MHz	-	8x16GB 2133MHz RDIMM	720ix +1GB RAM	24x2.5" HS	8x300GB 2.5" SAS6.0 10K HDD	1x32GB/No	None	None	6	No	TPM	Switch	TSM Premium	750Wx2 Platinum	No	Slide	3-year

Components	Specification						
Form factor	2U rack						
Processor	Up to two 105W Intel Xeon E 1.8 GHz, 10 cores up to 2.6 G 4 cores up to 3 GHz. Two QPI Up to 2133MHz memory spec	ed. Up to 30MB cache					
Memory DIMMs		per processor, 2 DIMMs per channel. be intermixed), DDR4, 2133MHz					
Memory capacity	56GB (RDIMM, 16GB x 16)/512GB (LRDIMM, 32GB x 16), 2nd CPU is needed						
Memory protection	ECC, memory mirroring, lockstep, and memory sparing						
AnyRAID support	model. RAID 0, 1, 10 with AnyRAID 1 RAID 0, 1, 10 with AnyRAID 5 RAID 0, 1, 10, 5, 50, 6, 60 wit cache for RAID 6/60 support. Optional cache for 720i/720ix:	720i/720ix for 8 x 2.5" model, 720ix for 16 or 24x 2.5"  10i. 6Gb/s SATA, optional key for RAID 5.  10i, 6Gb/s SAS/SATA, optional key for RAID 5/50.  h AnyRAID 720i/720ix. 12Gb/s SAS/SATA. 720i needs 720ix must have a cache.  1 1GB read-only memory. 1GB/2GB/4GB flash with include CacheVault, CacheCade Pro, and FastPath					
Disk drive bays	Up to 8 x 2.5" (Bay 0-7) disk of bays, or up to 24 x 2.5" (Bay 0	drive bays, or up to 16 x 2.5" (Bay 0-15) disk drive 0-23) disk drive bays (see right)					
SD module	Optional SD module, supports	s up to 2 optional SDHC flash cards					
Internal storage	2.5" SATA (7.2K 6Gbs HDD) 2.5" SAS (10K 6Gbs HDD) 2.5" SAS (15K 6Gbs HDD) 2.5" SAS SSD (12Gbs) 2.5" SATA SSD (6Gbs) Tape drive PCle SSD Adapter SDHC flash card Note: 1, SAS drive needs SAS adapter	300GB/11B 300GB/600GB/900GB/1.2TB 146GB/300GB/450GB/600GB 200GB/400GB/800GB 120GB/240GB/300GB/480GB/600GB/800GB 2.5TB 1.6TB/3.2TB 8GB/32GB 2. SDHC flash card needs SDHC flash memory module.					
Optical drive	Optional one UltraSlim optical supports DVD-ROM or DVD±I	drive bay on 8 and 16 x 2.5" bays model,					
Tape drive bays	AnyRAID 720ix is needed	ernal SAS tape drive. 8 x 2.5" model only.					
Network interfaces	Supports optional discrete ne						
Security features	1.2-compliant). Optional chass	assword. Optional Trusted Platform Module (TCG sis intrusion switch					
Systems management	Supports ThinkServer System Manager (TSM), optional TSM Premium. UEFI. Onboard Aspeed AST2400 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC). Control Panel LEDs shows the status of power, ID, network, system. Supports ThinkServer management software: Diagnostics, Deployment Manager, Energy Manager, System Manager, Partner Pack for VMware vCenter and Microsoft System Center Operations Manager, Power Planner						
Power supply	Up to two redundant hot-swap power supplies. 550 W and 11 PLUS Platinum or Titanium qu	0 450 W ac or 550 W ac or 750 W ac or 1100 W ac 100 W are 80 PLUS Platinum qualified, 750 W is 80 Luslified, 450 W is 80 PLUS Gold qualified. 750 W rs are 110V - 240V. 450 W is supported on 8 x 2.5"					

Components	Specification							
Operating systems supported	Business Server 2011, Windows Multipoint Server 2012. Red Hat E	R2, 2012, and 2008 R2, Windows Small Server Storage 2012 R2 and 2012, Windov Enterprise Linux 7.0 and 6.5. SUSE Linux re vSphere (ESXi) 5.1 P5 and 5.5 U2	ws					
Rack kit	Optional slide or static rack kit on s	selected model						
Base warranty	1 or 3-year limited onsite service Some parts are Customer Replace	eable Units						
Graphics	Onboard Aspeed AST2400 with 1 one VGA on rear. Maximum resolution	6MB memory, one DisplayPort on front, ution: 1920x1200@60Hz						
Front ports	Two USB 2.0, one DisplayPort							
Rear ports	One VGA, two USB 3.0, one RJ-4 (9-pin)	5 (dedicated mgmt), two ethernet, one ser	ial					
Cooling	4 (3+1, dual processors) or 3 (2+	1, single processor) fans, non-hot swap						
Hot-swap parts	Disk drives, power supplies	<u> </u>						
Noise emissions	Operating: < 6.5 Bels, Idle: < 5.6 I	Bels (Maximum configuration)						
	Temperature - operating	50 °F to 95 °F (10 °C to 35 °C)						
	Temperature - non operating (no package)	-10 °C to 60 °C						
Environmental	Temperature - non operating (with package)	-40 °C to 70 °C						
specification	Altitude - operating	(Unpressurized): 0-10000ft (0-3048m)						
'	Humidity - operating	8%~90%, non-condensing						
	Humidity - storage (with package)	8%~90%, non-condensing						
Weight	Minimum configuration: 16 kg (35	.3 lb), maximum: 27 kg (59.52 lb)						
Dimensions	Height: 87 mm (3.4 in), width: 482 mm (19 in), depth: 764 mm (30 in)							



#### **Expansion slots**

Up to 6 PCle 3.0 slots: one vertical onboard PCle slot, up to 5 PCle slots via two optional riser cards. Slot 1 (riser card 1): PCle 3.0 x8, half length, full height, CPU1 Slot 2 (riser card 1): PCle 3.0 x8, half length, full height, CPU1

Slot 3 (riser card 2): PCle 3.0 x8, low-profile, half length, CPU2, requires 2nd riser card and 2nd CPU Slot 4 (riser card 2): PCle 3.0 x8, low-profile, half length, CPU2, requires 2nd riser card and 2nd CPU Slot 5 (riser card 2): PCle 3.0 x8, low-profile, half length, CPU1, requires 2nd riser card and 2nd CPU

Slot 6 (onboard): PCIe 3.0 x16 (x8 elec), low-profile, half length, requires 2nd CPU

Note: Although slot 5 connects to CPU1, slot 5 is supported on model with two processors and two riser cards only.

#### Core options for ThinkServer RD450 (partial)

4X70F28590 16GB DDR4-2133MHz (2Rx4) RDIMM

4XB0F28662 3.2TB ioMemory SX300 Performance PCle 2.0 SSD by FusionIO

4XF0G45866 LTO-6 Linear Tape Drive Kit by Tandberg

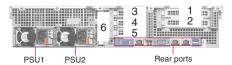
4XB0G45757 Lenovo ThinkServer RD450 Raid 720ix AnyRAID Adapter with Expander

4XF0G45867 ThinkServer System Manager Premium 4X20F28576 750W Titanium Hot Swap Power Supply

Type- model	Processor	2nd CPU	Memory	AnyRAID	Disk bays	Disk drives	SD module/ PCle x8 SSD	Optical	Tape drive	Slots	Discrete ethernet		Chassis intrusion switch	System mgmt	Power	Preloaded OS	Rack kit	Base wty
70DE000HUX	1xXeon E5-2609 v3 6C/ 1.9GHz/15MB/85W/1600MHz	4XG0F28859	1x4GB 2133MHz RDIMM	720ix +1GB RAM	24x2.5" HS	Open	No/No	None	None	No	No	TPM	No	TSM	750Wx1 Platinum	No	Slide	3-year
70DE000JUX	1xXeon E5-2620 v3 6C/ 2.4GHz/15MB/85W/1866MHz	4XG0F28858	1x8GB 2133MHz RDIMM	720ix +1GB RAM	24x2.5" HS	Open	No/No	None	None	2	No	TPM	No	TSM	750Wx1 Platinum	No	Slide	3-year
	4 V FF 0040 0 00/		1x8GB 2133MHz RDIMM	700'	24x2.5" HS	Open	No/No	None	None	2	No	TPM	No	TSM	750Wx1 Platinum	No	Slide	3-year

Components	Specification	
Form factor	2U rack	
Processor	Up to two 105W Intel Xeon E 1.8 GHz, 10 cores up to 2.6 G 4 cores up to 3 GHz. Two QPI Up to 2133MHz memory spec	ed. Up to 30MB cache
Memory DIMMs		per processor, 2 DIMMs per channel. be intermixed), DDR4, 2133MHz
Memory capacity	256GB (RDIMM, 16GB x 16)/	512GB (LRDIMM, 32GB x 16), 2nd CPU is needed
Memory protection	ECC, memory mirroring, locks	step, and memory sparing
AnyRAID support	model. RAID 0, 1, 10 with AnyRAID 1 RAID 0, 1, 10 with AnyRAID 5 RAID 0, 1, 10, 5, 50, 6, 60 wit cache for RAID 6/60 support. Optional cache for 720i/720ix:	720i/720ix for 8 x 2.5" model, 720ix for 16 or 24x 2.5"  10i. 6Gb/s SATA, optional key for RAID 5.  10i, 6Gb/s SAS/SATA, optional key for RAID 5/50.  h AnyRAID 720i/720ix. 12Gb/s SAS/SATA. 720i needs 720ix must have a cache.  1 1GB read-only memory. 1GB/2GB/4GB flash with include CacheVault, CacheCade Pro, and FastPath
Disk drive bays	Up to 8 x 2.5" (Bay 0-7) disk of bays, or up to 24 x 2.5" (Bay 0	drive bays, or up to 16 x 2.5" (Bay 0-15) disk drive 0-23) disk drive bays (see right)
SD module	Optional SD module, supports	s up to 2 optional SDHC flash cards
Internal storage	2.5" SATA (7.2K 6Gbs HDD) 2.5" SAS (10K 6Gbs HDD) 2.5" SAS (15K 6Gbs HDD) 2.5" SAS SSD (12Gbs) 2.5" SATA SSD (6Gbs) Tape drive PCle SSD Adapter SDHC flash card Note: 1, SAS drive needs SAS adapter	300GB/11B 300GB/600GB/900GB/1.2TB 146GB/300GB/450GB/600GB 200GB/400GB/800GB 120GB/240GB/300GB/480GB/600GB/800GB 2.5TB 1.6TB/3.2TB 8GB/32GB 2. SDHC flash card needs SDHC flash memory module.
Optical drive	Optional one UltraSlim optical supports DVD-ROM or DVD±I	drive bay on 8 and 16 x 2.5" bays model,
Tape drive bays	AnyRAID 720ix is needed	ernal SAS tape drive. 8 x 2.5" model only.
Network interfaces	Supports optional discrete ne	
Security features	1.2-compliant). Optional chass	assword. Optional Trusted Platform Module (TCG sis intrusion switch
Systems management	UEFI. Onboard Aspeed AST2 IPMI 2.0-compliant baseboard Control Panel LEDs shows the Supports ThinkServer manage	n Manager (TSM), optional TSM Premium. 400 graphics/management processor, d management controller (BMC). e status of power, ID, network, system. ement software: Diagnostics, Deployment Manager, nager, Partner Pack for VMware vCenter and Microsoft anager, Power Planner
Power supply	Up to two redundant hot-swap power supplies. 550 W and 11 PLUS Platinum or Titanium qu	0 450 W ac or 550 W ac or 750 W ac or 1100 W ac 100 W are 80 PLUS Platinum qualified, 750 W is 80 Luslified, 450 W is 80 PLUS Gold qualified. 750 W rs are 110V - 240V. 450 W is supported on 8 x 2.5"

	Components	Specification	
-	Operating systems	Business Server 2011, Windows Multipoint Server 2012. Red Hat E	R2, 2012, and 2008 R2, Windows Small Server Storage 2012 R2 and 2012, Windows Enterprise Linux 7.0 and 6.5. SUSE Linux re vSphere (ESXi) 5.1 P5 and 5.5 U2
	Rack kit	Optional slide or static rack kit on s	
]	Base warranty	1 or 3-year limited onsite service Some parts are Customer Replace	ceable Units
1	Graphics	Onboard Aspeed AST2400 with 1 one VGA on rear. Maximum resolution	6MB memory, one DisplayPort on front, ution: 1920x1200@60Hz
1	Front ports	Two USB 2.0, one DisplayPort	
	Rear ports	One VGA, two USB 3.0, one RJ-4 (9-pin)	15 (dedicated mgmt), two ethernet, one serial
	Cooling	4 (3+1, dual processors) or 3 (2+	1, single processor) fans, non-hot swap
1	Hot-swap parts	Disk drives, power supplies	
	Noise emissions	Operating: < 6.5 Bels, Idle: < 5.6 I	Bels (Maximum configuration)
		Temperature - operating	50 °F to 95 °F (10 °C to 35 °C)
┨		Temperature - non operating (no package)	-10 °C to 60 °C
	Environmental	Temperature - non operating (with package)	-40 °C to 70 °C
┨	specification	Altitude - operating	(Unpressurized): 0-10000ft (0-3048m)
┨		Humidity - operating	8%~90%, non-condensing
		Humidity - storage (with package)	8%~90%, non-condensing
	Weight	Minimum configuration: 16 kg (35	.3 lb), maximum: 27 kg (59.52 lb)
	Dimensions	Height: 87 mm (3.4 in), width: 482	2 mm (19 in), depth: 764 mm (30 in)
1			



#### **Expansion slots**

Up to 6 PCIe 3.0 slots: one vertical onboard PCIe slot, up to 5 PCIe slots via two optional riser cards.

Slot 1 (riser card 1): PCle 3.0 x8, half length, full height, CPU1 Slot 2 (riser card 1): PCle 3.0 x8, half length, full height, CPU1

Slot 3 (riser card 2): PCle 3.0 x8, low-profile, half length, CPU2, requires 2nd riser card and 2nd CPU Slot 4 (riser card 2): PCle 3.0 x8, low-profile, half length, CPU2, requires 2nd riser card and 2nd CPU

Slot 5 (riser card 2): PCle 3.0 x8, low-profile, half length, CPU1, requires 2nd riser card and 2nd CPU Slot 6 (onboard): PCIe 3.0 x16 (x8 elec), low-profile, half length, requires 2nd CPU

Note: Although slot 5 connects to CPU1, slot 5 is supported on model with two processors and two riser cards only.

#### Core options for ThinkServer RD450 (partial)

4X70F28590 16GB DDR4-2133MHz (2Rx4) RDIMM

4XB0F28662 3.2TB ioMemory SX300 Performance PCle 2.0 SSD by FusionIO

4XF0G45866 LTO-6 Linear Tape Drive Kit by Tandberg

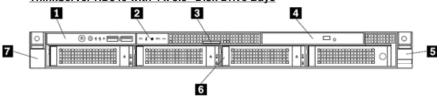
4XB0G45757 Lenovo ThinkServer RD450 Raid 720ix AnyRAID Adapter with Expander

4XF0G45867 ThinkServer System Manager Premium 4X20F28576 750W Titanium Hot Swap Power Supply

#### ThinkServer RD340 Overview

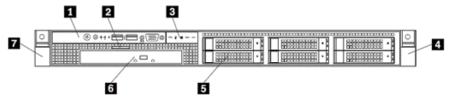
Front view - ThinkServer RD340 supports the following disk bay configurations:

ThinkServer RD340 with 4 x 3.5" Disk Drive Bays



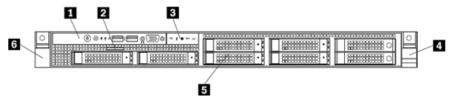
- 1. Front panel
  - Power Button with LED
  - ID button with LED
  - 2 Network interface status LEDs
  - System error LED
  - 2 USB 2.0
- Intelligent Diagnostics Module (IDM basic only, optional)
   Pull-out information card
- Slim optical drive (optional)
- Rack handle (right)
- 4 x 3.5" hot-swap disk drive bays
- 7. Rack handle (left)

### ThinkServer RD340 with 6 x 2.5" Disk Drive Bays



- 1. Front panel
  - Power Button with LED
  - ID button with LED
  - 2 Network interface status LEDs
  - System error LED
  - 2 USB 2.0
  - 1 VGA
- Pull-out information card
   Intelligent Diagnostics Module (IDM basic only, optional)
- Rack handle (right)
- 5. 6 x 2.5" hot-swap disk drive bays
- Slim optical drive (optional)
- 7. Rack handle (left)

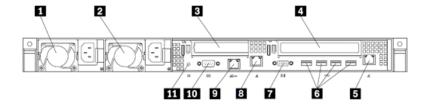
#### ThinkServer RD340 with 8 x 2.5" Disk Drive Bays



- 1. Front panel
  - Power Button with LED
  - ID button with LED
  - 2 Network interface status LEDs
  - System error LED 2 USB 2.0

  - 1 VGA
- 2. Pull-out information card
- Intelligent Diagnostics Module (IDM basic only, optional)
- Rack handle (right)
- 5. 8 x 2.5" hot-swap disk drive bays
- 6. Rack handle (left)

#### Rear view



- 1. Hot-swap redundant power supply 2 (optional)
- Hot-swap redundant power supply 1
- Low profile PCI Express slot by riser card 2
- PCI Express slot by riser card 1
- Ethernet 2 (RJ-45)
- 6. Four USB 2.0
- VGA DB-15 connector Ethernet 1 (RJ-45)
- Dedicate/share management connector (RJ-45)
- 10 Serial
- 11 ID LED

Type- model <sup>1</sup>	Intel Xeon Processor	2nd CPU	Memory	Disk Bays	RAID controller	Storage	Slim optical	Discrete ethernet					TPM module	Preloaded OS	Base warranty (-year, on-site)
70AB0004US	Xeon E5-2407 v2 4C/2.4GHz/10MB/1333MHz	2nd	8GBx12 1600MHz LVRDIMM	4X3.5" HS	RAID710 +CacheVault +CacheCade	2x400GB SSD(RAID1,cache) +2x500GB 3.5" SATA(RAID0)	DVD±RW	350T2	No	iKVM	Cable	1	TPM	2012 Standard	3
70AB0005UX	Xeon E5-2403 v2 4C/1.8GHz/10MB/1333MHz	No	4GBx1 1600MHz LVRDIMM	4X3.5" HS	RAID300	Open	DVD±RW	No	No	IPMI	No	1	TPM	No	3
70AB0006UX	Xeon E5-2407 v2 4C/2.4GHz/10MB/1333MHz	No	4GBx1 1600MHz LVRDIMM	4X3.5" HS	RAID300	Open	DVD±RW	No	No	IPMI	No	1	TPM	No	3
70AB0008UX	Xeon E5-2420 v2 6C/2.2GHz/15MB/1600MHz	No	4GBx2 1600MHz LVRDIMM	4X3.5" HS	RAID300 +upgrade	Open	DVD±RW	No	No	iKVM	No	1	TPM	No	3
70AB0009UX	Xeon E5-2450 v2 8C/2.5GHz/20MB/1600MHz	No	4GBx4 1600MHz LVRDIMM	4X3.5" HS	RAID700 +Battery	Open	DVD±RW	No	No	iKVM	No	1	TPM	No	3
70AB001TUX	Xeon E5-2403 v2 4C/1.8GHz/10MB/1333MHz	No	8GBx1 1600MHz LVRDIMM	4X3.5" HS	RAID300	Open	DVD±RW	No	No	IPMI	No	1	TPM	No	3
70AB001UUX	Xeon E5-2407 v2 4C/2.4GHz/10MB/1333MHz	No	8GBx1 1600MHz LVRDIMM	4X3.5" HS	RAID300	Open	DVD±RW	No	No	IPMI	No	1	TPM	No	3

<sup>1.</sup> Model in italics is Global model 2. By default, the voltage of LV RDIMM is 1.5V and can be changed to 1.35V in BIOS setting

- For detailed platform specifications, please see <u>ThinkServer RD340 Platform Specifications</u> sheets
   For optional configurations of ThinkServer RD340, please see <u>ThinkServer RD340 Optional Configurations</u> sheets

	<ul> <li>1U rack with ra</li> <li>19" W x 28.9" [</li> </ul>		J (with r	aak band	loo)	Cable mgmt (o	. / .		ole management arm on selected models
Mechanical	• 482.4mm W x 7	734mm D	x 43.6m	nm H (witl		Power supply	80 PL	_US Go	550 watts standard, two maximum, rear access, hot-swap, old qualified, redundant with two power supplies
Chipset	Intel C606 Chips				or processors	Security feature (TPM is optional	es Powe	er-on pa	assword/administrator password, form Module (TCG 1.2-compliant)
Memory DIMMs	Twelve DIMM so	ckets, six	DIMM s	ockets pe	er processor	Environmental certifications	• Ene		ar Server 2.0 qualified
Memory protection	ECC, memory m	irroring, n	nemory s	sparing			- 1101	110 0011	
	RAID adapter	RAID support	Cache	Transfer rates	Optional upgrades	Top			Front: Supports the following disk bay configurations: 4 x 3.5"
	RAID 300 (onboard)	0, 1, 10		6Gb/s	optional upgrade key, add RAID 5 support	Riser card 2	Power supply	Power supply	e∘ □□ ···· optical disk disk disk disk
RAID support*	RAID 500 (LSI 9240-8i)	0, 1, 10		6Gb/s	optional upgrade key, add RAID 5, 50 support	rd 2	ddns ,	ddns ,	6 x 2.5"
* RAID 50, 60 are supported on 8 x 2.5" disk bay models only	RAID 700 (LSI 9260-8i)	0, 1, 10, 5, 50, 6, 60	512MB	6Gb/s	optional intelligent Battery Backup Unit (iBBU08)		ly 1	ly 2	© Optical disk disk disk disk
	RAID 710 (LSI 9270CV-8i)	0, 1, 10, 5, 50, 6, 60	1GB	6Gb/s	optional CacheVault (CV) flash cache with super capacitor     optional CacheCade Pro 2.0     optional FastPath key	CPU1 Memory sockets	Memory sockets	_	8 x 2.5"  e
Optical drive (optional)	4 x 3.5"/6 x 2.5" : 8 x 2.5":	none o	ptical ba	y, option	ports one optional slim optical al external USB optical is needed	fan fan fan disks and o	fan far optical* are		PSU PSU
Onboard network	Two Gigabit Ethe one Gigabit Ethe				dedicate/share management	* Slim optical bay on 8 x 2.5" mode	is not availa	able	
Discrete network (optional)	1Gbps: 350-T2	/I350-T4			options on selected models: per Module for X520-DA2	Expansion Slo	ots:		Front/rear Ports: ard 2 for slot 2 Front: 1 VGA (for 6 x 2.5"/8 x 2.5" models).
Intelligent Diagnostics Module (optional)	IDM basic LED li	ghts indic	<u>ate failin</u>	ig compo	nent category	Slot 1: half-leng	gth, full-h	neight,	PCle 3.0 x16 2 USB 2.0
Systems management (iKVM is optional)	IPMI 2.0-comp optional Thinks	liant base Server Ma LEDs sho Grid Mana	board m nageme ws the singer	nanagement Modul tatus of p	agement processor, ent controller (BMC); e Premium for iKVM functions ower, ID, network, system asyUpdate	**x4 elec for single x8 elec for dual p	processor i	model,	1 RJ-45 (dedicate/share mgmt), 1 VGA
Cooling fans	6 fans, non-hot s	wap, 5 +	redund	dant					

Type- model <sup>1</sup>	Intel Xeon Processor	2nd CPU	Memory	Disk Bays	RAID controller	Storage	Slim optical	Discrete ethernet	Intelligent Diagnostics				TPM module	Preloaded OS	Base warranty (-year, on-site)
70AB001VUX	Xeon E5-2420 v2 6C/2.2GHz/15MB/1600MHz	No	8GBx1 1600MHz LVRDIMM	4X3.5" HS	RAID300	Open	DVD±RW	No	No	IPMI	No	1	TPM	No	3
70AB001WUX	Xeon E5-2430 v2 6C/2.5GHz/15MB/1600MHz	No	8GBx1 1600MHz LVRDIMM	4X3.5" HS	RAID300	Open	DVD±RW	No	No	IPMI	No	1	TPM	No	3
70AB001XUX	Xeon E5-2440 v2 8C/1.9GHz/20MB/1600MHz	No	8GBx1 1600MHz LVRDIMM	4X3.5" HS	RAID300	Open	DVD±RW	No	No	IPMI	No	1	TPM	No	3
70AB001YUX	Xeon E5-2450 v2 8C/2.5GHz/20MB/1600MHz	No	8GBx1 1600MHz LVRDIMM	4X3.5" HS	RAID300	Open	DVD±RW	No	No	IPMI	No	1	TPM	No	3
70AB0020UX	Xeon E5-2470 v2 10C/2.4GHz/25MB/1600MHz	No	8GBx1 1600MHz LVRDIMM	4X3.5" HS	RAID300	Open	DVD±RW	No	No	IPMI	No	1	TPM	No	3
70AB0021UX	Xeon E5-2440 v2 8C/1.9GHz/20MB/1600MHz	No	8GBx1 1600MHz LVRDIMM	4X3.5" HS	RAID500	Open	DVD±RW	No	No	IPMI	No	1	TPM	No	3
70AB0022UX	Xeon E5-2450 v2 8C/2.5GHz/20MB/1600MHz	No	8GBx1 1600MHz LVRDIMM	4X3.5" HS	RAID500	Open	DVD±RW	No	No	IPMI	No	1	TPM	No	3

<sup>1.</sup> Model in italics is Global model 2. By default, the voltage of LV RDIMM is 1.5V and can be changed to 1.35V in BIOS setting

- For detailed platform specifications, please see <u>ThinkServer RD340 Platform Specifications</u> sheets
   For optional configurations of ThinkServer RD340, please see <u>ThinkServer RD340 Optional Configurations</u> sheets

	<ul> <li>1U rack with ra</li> <li>19" W x 28.9" D</li> </ul>		⊔ /with r	aak band	loo)	Cable mgmt (opt	t) Optional ca	able management arm on selected models
Mechanical	• 482.4mm W x 7 • 17kg (37.5 lb) v	734mm D	x 43.6m	nm H (witl		Power supply	80 PLUS G	550 watts standard, two maximum, rear access, hot-swap, add qualified, redundant with two power supplies
Chipset	Intel C606 Chips	•			or processors			password/administrator password, atform Module (TCG 1.2-compliant)
Memory DIMMs	Twelve DIMM so	ckets, six	DIMM s	ockets pe	er processor	Environmental certifications	<ul><li>Energy S</li><li>RoHS-co</li></ul>	Star Server 2.0 qualified
Memory protection	ECC, memory m	irroring, n	nemory	sparing			110110 00	
	RAID adapter	RAID support	Cache	Transfer rates	Optional upgrades	Top		<b>Front:</b> Supports the following disk bay configurations: 4 x 3.5"
	RAID 300 (onboard)	0, 1, 10		6Gb/s	optional upgrade key, add RAID 5 support	Riser card 2	Power supply Power supply	e
RAID support*	RAID 500 (LSI 9240-8i)	0, 1, 10		6Gb/s	optional upgrade key, add RAID 5, 50 support	d 1	supp .	6 x 2.5"
* RAID 50, 60 are supported on 8 x 2.5" disk bay models only	RAID 700 (LSI 9260-8i)	0, 1, 10, 5, 50, 6, 60	512MB	6Gb/s	optional intelligent Battery Backup Unit (iBBU08)		<u>√</u> √ ∠ 2	© Optical disk disk disk
	RAID 710 (LSI 9270CV-8i)	0, 1, 10, 5, 50, 6, 60	1GB	6Gb/s	optional CacheVault (CV)     flash cache with super capacitor     optional CacheCade Pro 2.0     optional FastPath key	C CPU1	CPU2 Memory sockets	8 x 2.5"
	4 x 3.5"/6 x 2.5" : 8 x 2.5":	one slii	m optica ptical ba	l bay, sup ly, optiona	oports one optional slim optical al external USB optical is needed	fan fan fan disks and opt	fan fan fan	Rear         2-PClex8         1-PClex16           PSU PSU         □         □
Onboard network	Two Gigabit Ethe one Gigabit Ethe	rnet ports	by Intel 8	l i350, 82574L, d	dedicate/share management	* Slim optical bay is on 8 x 2.5" models	not available	
Discrete network (optional)	1Gbps: 350-T2/	/I350-T4			options on selected models: per Module for X520-DA2	Expansion Slot  Riser card 1 for:	s:	Front/rear Ports: ard 2 for slot 2 Front: 1 VGA (for 6 x 2.5"/8 x 2.5" models).
Intelligent Diagnostics Module (optional)	IDM basic LED li	ghts indic	ate failin	ng compo		Slot 1: half-lengt Slot 2: Low Profi	h. full-height.	PCle 3.0 x16 2 USB 2.0
Systems management (iKVM is optional)	IPMI 2.0-comp optional ThinkS	liant base Server Ma _EDs sho Grid Mana	board mageme ws the s	nanagement Modul tatus of p	agement processor, ent controller (BMC); e Premium for iKVM functions ower, ID, network, system asyUpdate	**x4 elec for single pi x8 elec for dual pro	rocessor model,	1 RJ-45 (dedicate/share mgmt), 1 VGA
Cooling fans	6 fans, non-hot s							

Type- model <sup>1</sup>	Intel Xeon Processor	2nd CPU	Memory	Disk Bays	RAID controller	Storage	Slim optical	Discrete ethernet	Intelligent Diagnostics				TPM module	Preloaded OS	Base warranty (-year, on-site)
70AB0023UX	Xeon E5-2470 v2 10C/2.4GHz/25MB/1600MHz	No	8GBx1 1600MHz LVRDIMM	4X3.5" HS	RAID500	Open	DVD±RW	No	No	IPMI	No	1	TPM	No	3
70AB0024UX	Xeon E5-2450 v2 8C/2.5GHz/20MB/1600MHz	No	8GBx1 1600MHz LVRDIMM	4X3.5" HS	RAID700	Open	DVD±RW	No	No	IPMI	No	1	TPM	No	3
70AB0025UX	Xeon E5-2470 v2 10C/2.4GHz/25MB/1600MHz	No	8GBx1 1600MHz LVRDIMM	4X3.5" HS	RAID700	Open	DVD±RW	No	No	IPMI	No	1	TPM	No	3
70AB0026UX	Xeon E5-2450 v2 8C/2.5GHz/20MB/1600MHz	No	8GBx1 1600MHz LVRDIMM	4X3.5" HS	RAID710	Open	DVD±RW	No	No	IPMI	No	1	TPM	No	3
70AB0027UX	Xeon E5-2470 v2 10C/2.4GHz/25MB/1600MHz	No	8GBx1 1600MHz LVRDIMM	4X3.5" HS	RAID710	Open	DVD±RW	No	No	IPMI	No	1	TPM	No	3
70AB0028UX	Xeon E5-2450 v2 8C/2.5GHz/20MB/1600MHz	No	8GBx1 1600MHz LVRDIMM	4X3.5" HS	RAID710	Open	DVD±RW	No	No	iKVM	No	1	TPM	No	3
70AB0029UX	Xeon E5-2470 v2 10C/2.4GHz/25MB/1600MHz	No	8GBx1 1600MHz LVRDIMM	4X3.5" HS	RAID710	Open	DVD±RW	No	No	iKVM	No	1	TPM	No	3

<sup>1.</sup> Model in italics is Global model 2. By default, the voltage of LV RDIMM is 1.5V and can be changed to 1.35V in BIOS setting

- For detailed platform specifications, please see <u>ThinkServer RD340 Platform Specifications</u> sheets
   For optional configurations of ThinkServer RD340, please see <u>ThinkServer RD340 Optional Configurations</u> sheets

	<ul> <li>1U rack with ra</li> <li>19" W x 28.9" [</li> </ul>		⊔ /with r	aak band	loo)	Cable mgmt (opt	t) Optional ca	able management arm on selected models
Mechanical	• 482.4mm W x 7 • 17kg (37.5 lb) v	734mm D	x 43.6m	nm H (witl		Power supply	80 PLUS G	550 watts standard, two maximum, rear access, hot-swap, alold qualified, redundant with two power supplies
Chipset	Intel C606 Chips	•			or processors			password/administrator password, atform Module (TCG 1.2-compliant)
Memory DIMMs	Twelve DIMM so	ckets, six	DIMM s	ockets pe	er processor	Environmental certifications	<ul><li>Energy S</li><li>RoHS-co</li></ul>	Star Server 2.0 qualified
Memory protection	ECC, memory m	irroring, n	nemory	sparing			110110 00	F ···
	RAID adapter	RAID support	Cache	Transfer rates	Optional upgrades	Top		Front: Supports the following disk bay configurations: 4 x 3.5"
	RAID 300 (onboard)	0, 1, 10		6Gb/s	optional upgrade key, add RAID 5 support	Riser card 2	Power supply Power supply	eo
RAID support*	RAID 500 (LSI 9240-8i)	0, 1, 10		6Gb/s	optional upgrade key, add RAID 5, 50 support	d 1	ddns .	6 x 2.5"
* RAID 50, 60 are supported on 8 x 2.5" disk bay models only	RAID 700 (LSI 9260-8i)	0, 1, 10, 5, 50, 6, 60	512MB	6Gb/s	optional intelligent Battery Backup Unit (iBBU08)		у <sub>1</sub>	© Optical disk disk disk optical disk disk disk
	RAID 710 (LSI 9270CV-8i)	0, 1, 10, 5, 50, 6, 60	1GB	6Gb/s	optional CacheVault (CV)     flash cache with super capacitor     optional CacheCade Pro 2.0     optional FastPath key	C CPU1	C P Memory sockets	8 x 2.5"  o Gisk disk disk disk disk disk disk disk d
	4 x 3.5"/6 x 2.5" : 8 x 2.5":	one slii	m optica ptical ba	l bay, sup ly, optiona	oports one optional slim optical al external USB optical is needed	fan fan fan disks and opt	fan fan fan	Rear         2-PCle x8         1-PCle x16           PSU PSU         □ □ □ □ □ □ □ □         □
Onboard network	Two Gigabit Ethe one Gigabit Ethe	rnet ports	by Intel 8	l i350, 82574L, d	dedicate/share management	* Slim optical bay is on 8 x 2.5" models	not available	
Discrete network (optional)	1Gbps: 350-T2	/I350-T4			options on selected models: per Module for X520-DA2	Expansion Slot  Riser card 1 for:	s:	Front/rear Ports: card 2 for slot 2 Front: 1 VGA (for 6 x 2.5"/8 x 2.5" models).
Intelligent Diagnostics Module (optional)	IDM basic LED li	ghts indic	ate failin	ng compo		Slot 1: half-lengt Slot 2: Low Profi	h. full-height	PCIe 3.0 x16 2 USB 2.0
Systems management (iKVM is optional)	IPMI 2.0-comp optional Thinks	liant base Server Ma _EDs sho Grid Mana	board mageme ws the s	nanagement Modul tatus of p	agement processor, ent controller (BMC); e Premium for iKVM functions ower, ID, network, system asyUpdate	**x4 elec for single proxx8 elec for dual prox	rocessor model,	1 RJ-45 (dedicate/share mgmt), 1 VGA
Cooling fans	6 fans, non-hot s							

Type- model <sup>1</sup>	Intel Xeon Processor	2nd CPU	Memory	Disk Bays	RAID controller	Storage			Intelligent Diagnostics					Preloaded OS	Base warranty (-year, on-site)
70AB002AUX	Xeon E5-2420 v2 6C/2.2GHz/15MB/1600MHz	2nd	8GBx8 1600MHz LVRDIMM	4X3.5" HS	RAID300 +upgrade	4x1TB 3.5" SATA	DVD±RW	350T2	No	iKVM	No	1	TPM	No	3
70AB002BUX	Xeon E5-2450 v2 8C/2.5GHz/20MB/1600MHz	2nd	16GBx8 1600MHz LVRDIMM	4X3.5" HS	RAID500 +upgrade	4x1TB 3.5" SAS	DVD±RW	350T4	No	iKVM	No	1	TPM	No	3

<sup>1.</sup> Model in italics is Global model 2. By default, the voltage of LV RDIMM is 1.5V and can be changed to 1.35V in BIOS setting

- For detailed platform specifications, please see <u>ThinkServer RD340 Platform Specifications</u> sheets
   For optional configurations of ThinkServer RD340, please see <u>ThinkServer RD340 Optional Configurations</u> sheets

	<ul> <li>1U rack with ra</li> <li>19" W x 28.9" [</li> </ul>		⊔ (with r	ack band	los)	Cable mgmt (o	. / .		ole management arm on selected models
Mechanical	<ul> <li>482.4mm W x 7</li> <li>17kg (37.5 lb) v</li> </ul>	734mm D	x 43.6m	m H (witl		Power supply	80 F	PLUS Go	550 watts standard, two maximum, rear access, hot-swap, old qualified, redundant with two power supplies
Chipset	Intel C606 Chips				or processors	Security feature (TPM is optional)	es Pow	er-on pa	assword/administrator password, form Module (TCG 1.2-compliant)
Memory DIMMs	Twelve DIMM so	ckets, six	DIMM so	ockets pe	er processor	Environmental certifications	• Er	nergy Sta	ar Server 2.0 qualified
Memory protection	ECC, memory m	irroring, n	nemory s	sparing			7 110	0110-0011	
	RAID adapter	RAID support	Cache	Transfer rates	Optional upgrades	Top		$\overline{}$	<b>Front:</b> Supports the following disk bay configurations: 4 x 3.5"
	RAID 300 (onboard)	0, 1, 10		6Gb/s	optional upgrade key, add RAID 5 support	Riser card 2	Powe	Power	optical  disk disk disk  disk
RAID support*	RAID 500 (LSI 9240-8i)	0, 1, 10		6Gb/s	optional upgrade key, add RAID 5, 50 support	rd 1	Power supply	Power supply	6 x 2.5"
* RAID 50, 60 are supported on 8 x 2.5" disk bay models only	RAID 700 (LSI 9260-8i)	0, 1, 10, 5, 50, 6, 60	512MB	6Gb/s	optional intelligent Battery Backup Unit (iBBU08)		7	ly 2	optical disk disk disk odisk disk
	RAID 710 (LSI 9270CV-8i)	0, 1, 10, 5, 50, 6, 60	1GB	6Gb/s	optional CacheVault (CV)     flash cache with super capacitor     optional CacheCade Pro 2.0     optional FastPath key	Memory sockets	Memory sockets	PU2	8 x 2.5"  Output  Outp
Optical drive (optional)	4 x 3.5"/6 x 2.5" : 8 x 2.5":	: one slii none o	m optica ptical ba	l bay, sup y, optiona	oports one optional slim optical al external USB optical is needed	fan fan fan disks and o		fan fan	Rear         2-PClex8         1-PClex16           PSU         0         0
	Two Gigabit Ethe one Gigabit Ethe				dedicate/share management	* Slim optical bay	is not ava		
(optional)	1Gbps: 350-T2	/I350-T4		'	options on selected models: per Module for X520-DA2	Expansion SI  Riser card 1 fo	ots:	ricor oo	Front/rear Ports: ard 2 for slot 2 Front: 1 VGA (for 6 x 2.5"/8 x 2.5" models).
Intelligent Diagnostics Module (optional)	IDM basic LED li	ights indic	ate failin	g compo	odule (IDM) basic, nent category	Slot 1: half-leng	gth, full	height,	PCle 3.0 x16 2 USB 2.0
Systems management (iKVM is optional)	IPMI 2.0-comp	lliant base Server Ma LEDs sho Grid Mana	board mageme ws the sager	anagement Modul tatus of p	agement processor, ent controller (BMC); e Premium for iKVM functions ower, ID, network, system asyUpdate	**x4 elec for single x8 elec for dual p	processo	r model,	1 RJ-45 (dedicate/share mgmt), 1 VGA
Cooling fans	6 fans, non-hot s								

Type- model <sup>1</sup>	Intel Xeon Processor	2nd CPU	Memory	Disk Bays	RAID controller	Storage			Intelligent Diagnostics					Preloaded OS	Base warranty (-year, on-site)
70AC0000US	Xeon E5-2430L v2 6C/2.4GHz/15MB/1600MHz	2nd	16GBx12 1600MHz LVRDIMM	6X2.5" HS	RAID710 +CacheVault +FastPath	4x400GB SSD(RAID6) +2x400GB SSD(RAID0)	DVD±RW	350T2	No	iKVM	Cable	1	TPM	2012 Standard	3

<sup>1.</sup> Model in italics is Global model 2. By default, the voltage of LV RDIMM is 1.5V and can be changed to 1.35V in BIOS setting

- For detailed platform specifications, please see <u>ThinkServer RD340 Platform Specifications</u> sheets
   For optional configurations of ThinkServer RD340, please see <u>ThinkServer RD340 Optional Configurations</u> sheets

	<ul> <li>1U rack with ra</li> <li>19" W x 28.9" [</li> </ul>		J (varith r	aak band	loo)	Cable mgmt (opt) Optional cable management arm on selected models							
Mechanical	• 482.4mm W x 7	734mm D	x 43.6m	nm H (witl		Power supply	80 PL	_US Go	550 watts standard, two maximum, rear access, hot-swap, old qualified, redundant with two power supplies				
Chipset	Intel C606 Chips				or processors	Security feature (TPM is optional	es Powe	r-on pa	assword/administrator password, form Module (TCG 1.2-compliant)				
Memory DIMMs	Twelve DIMM so	ckets, six	DIMM s	ockets pe	er processor	Environmental certifications	• Ene		ar Server 2.0 qualified				
Memory protection	ECC, memory m	irroring, n	nemory	sparing									
	RAID adapter	Transfer rates	Optional upgrades	Top			Front: Supports the following disk bay configurations: 4 x 3.5"						
	RAID 300 (onboard)	6Gb/s	optional upgrade key, add RAID 5 support	Riser card 2	Power supply	Power supply	e∘ □□ ···· optical disk disk disk disk						
RAID support*	RAID 500 (LSI 9240-8i)	6Gb/s	optional upgrade key, add RAID 5, 50 support	rd 2	ddns ,	ddns ,	6 x 2.5"						
* RAID 50, 60 are supported on 8 x 2.5" disk bay models only	RAID 700 (LSI 9260-8i)	0, 1, 10, 5, 50, 6, 60	512MB	6Gb/s	optional intelligent Battery Backup Unit (iBBU08)		ly 1	<b>y</b> 2	© Optical disk disk disk disk				
	RAID 710 (LSI 9270CV-8i)	0, 1, 10, 5, 50, 6, 60	1GB	6Gb/s	optional CacheVault (CV) flash cache with super capacitor     optional CacheCade Pro 2.0     optional FastPath key	CPU1 Memory sockets	Memory	_	8 x 2.5"  e				
Optical drive (optional)	4 x 3.5"/6 x 2.5" : 8 x 2.5":	none o	ptical ba	y, option	ports one optional slim optical al external USB optical is needed	fan fan fan disks and o	fan far optical* are		PSU PSU				
Onboard network	Two Gigabit Ethe one Gigabit Ethe				dedicate/share management	* Slim optical bay on 8 x 2.5" mode	is not availa	able					
Discrete network (optional)	1Gbps: 350-T2	/I350-T4			options on selected models: per Module for X520-DA2	Expansion Slo	ots:		Front/rear Ports: ard 2 for slot 2 Front: 1 VGA (for 6 x 2.5"/8 x 2.5" models).				
Intelligent Diagnostics Module (optional)	IDM basic LED li	ghts indic	<u>ate failir</u>	ig compo	nent category	Slot 1: half-leng	gth, full-h	neight,	PCle 3.0 x16 2 USB 2.0				
Systems management (iKVM is optional)	IPMI 2.0-comp optional Thinks	liant base Server Ma LEDs sho Grid Mana	board in nageme ws the sager	nanagement Modul tatus of p	agement processor, ent controller (BMC); e Premium for iKVM functions ower, ID, network, system asyUpdate	**x4 elec for single x8 elec for dual p	processor	model,	1 RJ-45 (dedicate/share mgmt), 1 VGA				
Cooling fans	6 fans, non-hot s	wap, 5 +	1 redunc	dant									

Type- model <sup>1</sup>	Intel Xeon Processor	2nd CPU	Memory	Disk Bays	RAID controller	Storage	Slim optical	1	Intelligent Diagnostics	l	1		TPM module	Preloaded OS	Base warranty (-year, on-site)
70AD0000US	Xeon E5-2420 v2 6C/2.2GHz/15MB/1600MHz	2nd	16GBx12 1600MHz LVRDIMM	8X2.5" HS	RAID500 +upgrade	8x900GB 2.5" SAS(RAID50)	N/A	X540T2	No	iKVM	Cable	1	TPM	2012 Standard	3

<sup>1.</sup> Model in italics is Global model 2. By default, the voltage of LV RDIMM is 1.5V and can be changed to 1.35V in BIOS setting

- For detailed platform specifications, please see <u>ThinkServer RD340 Platform Specifications</u> sheets
   For optional configurations of ThinkServer RD340, please see <u>ThinkServer RD340 Optional Configurations</u> sheets

	• 1U rack with rai		مصما بامصد ملا	U \	Cable mgmt (op	Cable mgmt (opt) Optional cable management arm on selected models							
Mechanical	• 19" W x 28.9" E • 482.4mm W x 7 • 17kg (37.5 lb) v	734mm D x 43	.6mm H (wit		Power supply	80 PLUS	wo 550 watts standard, two maximum, rear access, hot-swap, S Gold qualified, redundant with two power supplies						
Chipset	Intel C606 Chips			or processors	Security feature (TPM is optiona	Power-o	n password/administrator password, Platform Module (TCG 1.2-compliant)						
Memory DIMMs	Twelve DIMM so	ckets, six DIM	M sockets p	er processor	Environmental certifications	Energy	y Star Server 2.0 qualified						
Memory protection	ECC, memory m	irroring, memo	ry sparing										
	RAID adapter	RAID support Cad	the Transfe rates	Optional upgrades	Top		Front: Supports the following disk bay configurations:  4 x 3.5"						
	RAID 300 (onboard)	0, 1, 10	6Gb/s	optional upgrade key, add RAID 5 support	Riser card 2	Power supply	e∘ □□ ···· optical disk disk disk disk						
RAID support*	RAID 500 (LSI 9240-8i)	0, 1, 10	6Gb/s	optional upgrade key, add RAID 5, 50 support	rd 1	ddns	6 x 2.5"						
* RAID 50, 60 are supported on 8 x 2.5" disk bay models only	RAID 700 (LSI 9260-8i)	0, 1, 10, 5, 50, 6, 60	MB 6Gb/s	optional intelligent Battery Backup Unit (iBBU08)			optical disk disk disk						
	RAID 710 (LSI 9270CV-8i)	0, 1, 10, 5, 50, 6, 60	iB 6Gb/s	optional CacheVault (CV)     flash cache with super capacitor     optional CacheCade Pro 2.0     optional FastPath key	Memory Sockets	CPU2 Memory sockets	8 x 2.5"    One of the control of th						
Optical drive (optional)	4 x 3.5"/6 x 2.5" : 8 x 2.5":	none optica	I bay, option	oports one optional slim optical al external USB optical is needed	fan fan fan disks and op	fan	PSU PSU						
Onboard network	Two Gigabit Ethe one Gigabit Ethe			dedicate/share management	* Slim optical bay is on 8 x 2.5" model	s not available							
Discrete network (optional)	1Gbps: 350-T2/ 10Gbps: X520-S	/I350-T4		options on selected models: ber Module for X520-DA2	Expansion Slo	its:	Front/rear Ports: er card 2 for slot 2 Front: 1 VGA (for 6 x 2.5"/8 x 2.5" models),						
Intelligent Diagnostics Module (optional)	IDM basic LED li	<u>ghts indicate f</u>	<u>ailing compo</u>			th, full-heig	ght, PCle 3.0 x16 2 USB 2.0						
Systems management (iKVM is optional)	IPMI 2.0-comploptional ThinkS	liant baseboai Server Manago _EDs shows th Grid Manager	d managem ement Modu ne status of p	nagement processor, ent controller (BMC); le Premium for iKVM functions power, ID, network, system asyUpdate	**x4 elec for single p	processor mod	1 RJ-45 (dedicate/share mgmt), 1 VGA						
Cooling fans	6 fans, non-hot s	wap, 5 + 1 rec	undant										
0 (													

Type- model <sup>1</sup>	Intel Xeon Processor	2nd CPU	Memory	Disk Bays	RAID controller	Storage			Intelligent Diagnostics				TPM module	Preloaded OS	Base warranty (-year, on-site)
70A90000US	Xeon E5-2440 v2 8C/1.9GHz/20MB/1600MHz	2nd	8GBx8 (lockstep) 1600MHz LVRDIMM	6X2.5 HS	RAID700 +Battery	6x400GB SSD(RAID50)	No	X540T2	No	iKVM	Cable	1	TPM	2012 Standard	1
70A90001UX	Xeon E5-2420 v2 6C/2.2GHz/15MB/1600MHz	2nd	8GBx8 1600MHz LVRDIMM	6X2.5 HS	RAID700	6x1TB 2.5 SATA	DVD±RW	350T2	No	iKVM	No	1	TPM	No	3
70A90002UX	Xeon E5-2450 v2 8C/2.5GHz/20MB/1600MHz	2nd	8GBx8 1600MHz LVRDIMM	6X2.5 HS	RAID700 +Battery	6x300GB 2.5 SAS	DVD±RW	350T2	No	iKVM	No	1	TPM	No	3

<sup>1.</sup> Model in italics is Global model 2. By default, the voltage of LV RDIMM is 1.5V and can be changed to 1.35V in BIOS setting

- For detailed platform specifications, please see <u>ThinkServer RD340 Platform Specifications</u> sheets
   For optional configurations of ThinkServer RD340, please see <u>ThinkServer RD340 Optional Configurations</u> sheets

	• 1U rack with ra	il kit				Cable momt (ont)	Ontional	able management arm on selected models					
Mechanical	• 19" W x 28.9" [ • 482.4mm W x 7	0 x 1.72"	H (with r	ack hand	les)	Power supply	One or two	o 550 watts standard, two maximum, rear access, hot-swap,					
	• 17kg (37.5 lb) v	when fully	configu	red	Track nandies)	1		Gold qualified, redundant with two power supplies					
Chipset	Intel C606 Chips	et, two LO	A1356	sockets fo	or processors	(TPM is optional)	Power-on Trusted PI	password/administrator password, atform Module (TCG 1.2-compliant)					
Memory DIMMs	Twelve DIMM so	ckets, six	DIMM s	ockets pe	er processor	Environmental • Energy Star Server 2.0 qualified • RoHS-compliant							
Memory protection	ECC, memory m	nemory	sparing		The state of the s								
	RAID adapter	Cache	Transfer rates	Optional upgrades	Top		Front: Supports the following disk bay configurations: 4 x 3.5"						
	RAID 300 (onboard)	0, 1, 10		6Gb/s	optional upgrade key, add RAID 5 support	Riser card 2	Power	e∘ □□ ···· optical disk disk disk					
RAID support*	RAID 500 (LSI 9240-8i)	0, 1, 10		6Gb/s	optional upgrade key, add RAID 5, 50 support	d 1	Power supply Power supply	6 x 2.5"					
* RAID 50, 60 are supported on 8 x 2.5" disk bay models only	RAID 700 (LSI 9260-8i)	0, 1, 10, 5, 50, 6, 60	512MB	6Gb/s	optional intelligent Battery Backup Unit (iBBU08)		₹ ₹ 1 2	© □ □ □ ···· disk disk disk optical disk disk disk					
	RAID 710 (LSI 9270CV-8i)	0, 1, 10, 5, 50, 6, 60	1GB	6Gb/s	optional CacheVault (CV)     flash cache with super capacitor     optional CacheCade Pro 2.0     optional FastPath key	Memory sockets	CPU2 Memory sockets	8 x 2.5"					
Optical drive (optional)	8 x 2.5":	none o	ptical ba	y, option	ports one optional slim optical al external USB optical is needed	fan fan fan disks and opti	fan fan fan	Rear					
Onboard network	Two Gigabit Ethe one Gigabit Ethe				dedicate/share management	* Slim optical bay is i on 8 x 2.5" models	not available						
Discrete network (optional)	1Gbps: 350-T2	/I350-T4		'	options on selected models: per Module for X520-DA2	Expansion Slots  Riser card 1 for s	s:	Front/rear Ports: card 2 for slot 2 Front: 1 VGA (for 6 x 2.5"/8 x 2.5" models).					
Intelligent Diagnostics Module (optional)	IDM basic LED li	ghts indic	ate failin	ig compo		Slot 1: half-length Slot 2: Low Profil	n. full-heiah	t. PCle 3.0 x16 2 USB 2.0					
Systems management (iKVM is optional)	IPMI 2.0-comp optional Thinks	liant base Server Ma LEDs sho Grid Mana	board mageme ws the s ger	nanagement Modul tatus of p	agement processor, ent controller (BMC); e Premium for iKVM functions ower, ID, network, system asyUpdate	**x4 elec for single pro x8 elec for dual proc	ocessor model,						
Cooling fans	6 fans, non-hot s	wap, 5 +	1 redunc	lant									
	de te the el to te man est en												

Type- model <sup>1</sup>	Intel Xeon Processor	2nd CPU	Memory	Disk Bays	RAID controller	Storage			Intelligent Diagnostics					Preloaded OS	Base warranty (-year, on-site)
70AA0000US	Xeon E5-2403 v2 4C/1.8GHz/10MB/1333MHz	2nd	16GBx12 1600MHz LVRDIMM	8X2.5 HS	RAID700	4x300GB 2.5" SAS(RAID6) +4x400GB SSD(RAID5)	N/A	X520SR2	No	iKVM	Cable	1	TPM	2012 Standard	3
70AA0001UX	Xeon E5-2450 v2 8C/2.5GHz/20MB/1600MHz	2nd	16GBx8 1600MHz LVRDIMM	8X2.5 HS	RAID710 +CacheVault	6x600GB 2.5 SAS	N/A	X540T2	No	iKVM	No	1	TPM	No	3

<sup>1.</sup> Model in italics is Global model 2. By default, the voltage of LV RDIMM is 1.5V and can be changed to 1.35V in BIOS setting

- For detailed platform specifications, please see <u>ThinkServer RD340 Platform Specifications</u> sheets
   For optional configurations of ThinkServer RD340, please see <u>ThinkServer RD340 Optional Configurations</u> sheets

	<ul> <li>1U rack with ra</li> <li>19" W x 28.9" [</li> </ul>		I /with w	aali baad	loo)	Cable mgmt (opt) Optional cable management arm on selected models							
Mechanical	• 482.4mm W x 7	734mm D	x 43.6m	nm H (witl		Power supply	80 P	LUS G	550 watts standard, two maximum, rear access, hot-swap, old qualified, redundant with two power supplies				
Chipset	Intel C606 Chips				or processors	Security featur	es Powe	er-on pated Plat	assword/administrator password, tform Module (TCG 1.2-compliant)				
Memory DIMMs	Twelve DIMM so	ckets, six	DIMM s	ockets pe	er processor	Environmental certifications	• En	ergy St	tar Server 2.0 qualified				
Memory protection	ECC, memory m	irroring, n	nemory	sparing									
	RAID adapter	RAID support	Cache	Transfer rates	Optional upgrades	Top		$\overline{}$	Front: Supports the following disk bay configurations: 4 x 3.5"				
	RAID 300 (onboard)	0, 1, 10		6Gb/s	optional upgrade key, add RAID 5 support	Riser card 2	Power supply	Power supply	e contical disk disk disk				
RAID support*	RAID 500 (LSI 9240-8i)	0, 1, 10		6Gb/s	optional upgrade key, add RAID 5, 50 support	rd 2	r supp	r supp	6 x 2.5"				
* RAID 50, 60 are supported on 8 x 2.5" disk bay models only	RAID 700 (LSI 9260-8i)	0, 1, 10, 5, 50, 6, 60	512MB	6Gb/s	optional intelligent Battery Backup Unit (iBBU08)		ý 1	ly 2	optical disk disk disk				
	RAID 710 (LSI 9270CV-8i)	0, 1, 10, 5, 50, 6, 60	1GB	6Gb/s	optional CacheVault (CV) flash cache with super capacitor     optional CacheCade Pro 2.0     optional FastPath key	CPU1 Sockets	Memory sockets	_	8 x 2.5"				
Optical drive (optional)	4 x 3.5"/6 x 2.5" 8 x 2.5":	none o	ptical ba	y, option	ports one optional slim optical al external USB optical is needed	fan fan fan disks and d	fan fa		Rear           PSU PSU         2-PCie x8         11-PCie x16           DDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDD				
Onboard network	Two Gigabit Ethe				dedicate/share management	* Slim optical bay on 8 x 2.5" mod	•						
Discrete network (optional)	1Gbps: 350-T2 10Gbps: X520-S	/I350-T4 :R2/X520-	·DA2/X5	40-T2/Fib	options on selected models: per Module for X520-DA2	Expansion SI	ots:		Front/rear Ports: ard 2 for slot 2 Front: 1 VGA (for 6 x 2.5"/8 x 2.5" models).				
Intelligent Diagnostics Module (optional)	Supports optiona IDM basic LED li	al Intellige ghts indic	nt Diagn ate failin	ostics Mo	odule (IDM) basic, nent category	Riser card 1 for slot 1, riser card 2 for slot 2 Slot 1: half-length, full-height, PCle 3.0 x16 Slot 2: Low Profile, PCle 3.0 x8** Front: 1 VGA (for 6 x 2.5"/8 x 2.5" models), 2 USB 2.0 Rear: 4 USB 2.0, 1 serial (9-pin), 2 ethernet (RJ-4)							
Systems management (iKVM is optional)	<ul> <li>Onboard Aspe IPMI 2.0-comp optional Thinks</li> </ul>	ed AST23 liant base Server Ma LEDs sho Grid Mana	300 grap board mageme ws the sager	hics/man nanagement Modul tatus of p	agement processor, ent controller (BMC); e Premium for iKVM functions lower, ID, network, system	**x4 elec for single processor model,  x8 elec for dual processors model  **Teal 4 Follow Floring, Folie 3.0 x8  1 RJ-45 (dedicate/share mgmt), 1 Vi							
Cooling fans	6 fans, non-hot s												
0 6	de te the all to te man extern				<u> </u>								

		O y O to	io ope	omou	tions - I of II							
Components	Specifications											
Mechanical	<ul> <li>1U rack with rai</li> <li>19" W x 28.9" E</li> <li>482.4mm W x 7</li> <li>17kg (37.5 lb) v</li> </ul>	) x 1.72" H '34mm D x	43.6mm	H (with	es) rack handles)							
Chipset	Intel C606 Chips	et										
Processors	up to 8 cores (E5- up to 20MB (E5-2 integrated 3-char	Two LGA1356 sockets, supports up to two processors from Intel <b>Xeon E5-2400</b> or <b>Xeon E5-2400 v2</b> families, up to 8 cores (E5-2400 series)/10 cores (E5-2400 v2 series), one QPI links up to 8.0GT/s, up to 20MB (E5-2400 series)/25MB (E5-2400 v2 series) acche, nategrated by DR3 memory controller up to 1600MHz										
Memory type	600MHz, LV RDIMM*, DDR3, 3-channel per processor, 240-pin  By default, the voltage of LV RDIMM is 1.5V and can be changed to 1.35V in BIOS setting											
Memory DIMMs		welve DIMM sockets, six DIMM sockets per processor										
Memory protection		ECC, memory mirroring, memory sparing										
Disk bays configurations	Supports one of • 4 x 3.5" disk ba • 6 x 2.5" disk ba • 8 x 2.5" disk ba	ys + 1 x sli ys + 1 x sli	m optica	l bay								
	RAID adapter	RAID support**	Cache	Transfer rates	Optional upgrades							
	RAID 300 (onboard) RAID 500	0, 1, 10		6Gb/s	optional upgrade key, add RAID 5 support optional upgrade key,							
RAID support*	(LSI 9240-8i)	0, 1, 10		6Gb/s	add RAID 5, 50 support							
* RAID 50, 60 are supported on 8 x 2.5" disk bay models only	RAID 700 (LSI 9260-8i)	5, 50, 6, 60	512MB	6Gb/s	optional intelligent Battery Backup Unit (iBBU08)							
	RAID 710 (LSI 9270CV-8i)	0, 1, 10, 5, 50, 6, 60	1GB	6Gb/s	optional CacheVault (CV) flash cache with super capacitor     optional CacheCade Pro 2.0     optional FastPath key							
Optical drive (optional)	4 x 3.5"/6 x 2.5" r 8 x 2.5" models:				y, supports one optional slim optional external USB optical is ne							
Onboard network		rnet port by	/ Intel 82	574L, de	edicate/share management							
Front ports					5"/8 x 2.5" models), two USB 2.0							
Rear ports	Four USB 2.0, or one RJ-45 (dedic				et (RJ-45), g VGA DB-15 connector							
Expansion Slots				- 0								
	Slot 1: half-length Slot 2: Low Profil	i, full-heigh e, PCI Exp	t, PCI Exress 3.0	(press 3. x8 ( <i>x4 el</i>	lec for single processor model, x8	elec for dual processors model)						
Graphics	Maximum resolut	ion: 1920x	1200@6	0Hz	·	on front, one VGA DB-15 on rear;						
Intelligent Diagnostics Module (optional)	Supports optiona IDM basic LED lig	ghts indica	te failing	compon	ent category							
Systems management (iKVM is optional)	<ul> <li>Onboard Aspeed AST2300 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC); optional ThinkServer Management Module Premium for iKVM functions</li> <li>Front control panel LEDs shows the status of power, ID, network, system</li> <li>Lenovo SmartGrid Manager</li> <li>ThinkServer EasyStartup/EasyManage/EasyUpdate</li> </ul>											
Cooling fans	6 fans, non-hot s	1 /										
Cable mgmt (opt)	Optional cable m	anagemen	t arm on	selected	l models							

## ThinkServer RD340 Platform Systems Specifications - II of II

Components	Specifications												
Power supply		tandard, two maximum, rear acc I, redundant with two power supp											
Hot-swap parts	Disk drives, power supp	olies, and cooling fans											
Security features (TPM is optional)	Power-on password/adi	ministrator password/Trusted Pla	tform Module (TCG 1.2-compliant)										
	Environmental certifications	<ul> <li>Energy Star Server 2.0 qualified</li> <li>RoHS-compliant</li> </ul>											
	EMC	FCC Class A, CSA, CE											
	240VA	Supports											
	Temperature - operating	50 °F to 95 °F (10 °C to 35 °C)											
	Temperature - non operating (no package)	emperature - on operating -10 °C to 60 °C											
	Temperature - non operating (with package)	-40 °C to 70 °C											
	Altitude - operating	1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0											
	Humidity - operating 8%~80%, non-condensing												
Safety, environment, and certifications	Humidity - non operating (no package)	8%~80%, non-condensing											
	Humidity - non operating (with package)	8%~90%, non-condensing											
			System	Configuration									
		Category	Entry level	High-end									
		CPU	1	2									
		Memory	4GB x 1	4GB x 12									
	A	Optical Drive	Slim optical	Slim optical									
	Acoustic noise (idle/working mode)	Drive Bays	4 x 3.5"	6 x 2.5"									
	(idio/working mode)	RAID	RAID500	RAID500									
		HDD	2 x 500GB 3.5" SATA	6 x 300GB 2.5" SAS									
		PSU	550Wx1	550Wx2									
		Sound Pressure (operating)	45.28 dB(A)	44.74 dB(A)									
		Sound Pressure (idle)	45.28 dB(A)	44.95 dB(A)									

# ThinkServer RD340 Optional Configurations - Processor and Memory

Rack kit	Included in models														
Processor	The following proces	sor op	otions are	available:											
					Processors	Specifi	cations*			Dovt					
	Processor Number		# of Threads	Clock Speed	Max Turbo Frequency	Cache	QPI Speed	Max TDP	Memory Speed	Part Number					
	Intel Xeon E5-2400	Intel Xeon E5-2400 v2 Series													
	Xeon E5-2440 v2	8	16	1.9 GHz	2.4 GHz	20MB	7.2 GT/s	95W	DDR3-1600	0C19539					
	Xeon E5-2450 v2	8	16	2.5 GHz	3.3 GHz	20MB	8 GT/s	95W	DDR3-1600	0C19538					
	Xeon E5-2450L v2	10	20	1.7 GHz	2.1 GHz	25MB	7.2 GT/s	60W	DDR3-1600	0C19544					
	Xeon E5-2470 v2	10	20	2.4 GHz	3.2 GHz	25MB	8 GT/s	95W	DDR3-1600	0C19537					
	Xeon E5-2407 v2	4	4	2.4 GHz	2.4 GHz	10MB	6.4 GT/s	80W	DDR3-1333	0C19542					
	Xeon E5-2420 v2	6	12	2.2 GHz	2.7 GHz	15MB	7.2 GT/s	80W	DDR3-1600	0C19541					
	Xeon E5-2430 v2	6	12	2.5 GHz	3 GHz	15MB	7.2 GT/s	80W	DDR3-1600	0C19540					
	Xeon E5-2430L v2	6	12	2.4 GHz	2.8 GHz	15MB	7.2 GT/s	60W	DDR3-1600	0C19545					
	Xeon E5-2403 v2	4	4	1.8 GHz	1.8 GHz	10MB	6.4 GT/s	80W	DDR3-1333	0C19543					
	Intel Xeon E5-2400 Series														
	Xeon E5-2450L	8	16	1.8 GHz	2.3 GHz	20MB	8 GT/s	70 W	DDR3-1600	0A89450					
	Xeon E5-2450	8	16	2.1 GHz	2.9 GHz	20MB	8 GT/s	95 W	DDR3-1600	0A89444					
	Xeon E5-2440	6	12	2.4 GHz	2.9 GHz	15MB	7.2 GT/s	95 W	DDR3-1333	0A89445					
	Xeon E5-2430L	6	12	2 GHz	2.5 GHz	15MB	7.2 GT/s	60 W	DDR3-1333	0A89451					
	Xeon E5-2407	4	4	2.2 GHz		10MB	6.4 GT/s	80 W	DDR3-1066	0A89448					
	Xeon E5-2403	4	4	1.8 GHz		10MB	6.4 GT/s	80 W	DDR3-1066	0A89449					
	Xeon E5-2430	6	12	2.2 GHz	2.7 GHz	15MB	7.2 GT/s	95 W	DDR3-1333	0A89446					
	Xeon E5-2420	6	12	1.9 GHz	2.4 GHz	15MB	7.2 GT/s	95 W	DDR3-1333	0A89447					
	Xeon E5-2470	8	16	2.3 GHz	3.1 GHz	20MB	8 GT/s	95 W	DDR3-1600	0A89443					
	Notes: All processors specifica The information herein Intel may update this in	is prov	ided "as-is'	, -			•		l.com/						
			Men	nory optior	ıs				Part Number						
Memory options	ThinkServer 4GB D	DR3L	-1600MHz	z (1RX8) F	RDIMM			0C195	0C19533						
	ThinkServer 8GB D	DR3L	-1600MHz	z (2RX8) F	RDIMM			0C195	0C19534						
	ThinkServer 16GB	DDR3	L-1600MF	lz (2RX4)	RDIMM			0C195	35						

## ThinkServer RD340 Optional Configurations - Storage and RAID

Hot-swap disk drive options for 3.5" bay Part Numbe  3.5" SATA Hard Drive  ThinkServer 3.5" 500GB 7.2K Enterprise SATA 6Gbps Hot Swap Hard Drive 0A89473  ThinkServer 3.5" 1TB 7.2K Enterprise SATA 6Gbps Hot Swap Hard Drive 0A89474  ThinkServer 3.5" 2TB 7.2K Enterprise SATA 6Gbps Hot Swap Hard Drive 0A89475  ThinkServer 3.5" 3TB 7.2K Enterprise SATA 6Gbps Hot Swap Hard Drive 0A89477  ThinkServer 3.5" 3TB 7.2K Enterprise SATA 6Gbps Hot Swap Hard Drive 0C19520  3.5" SAS Hard Drive 0C19530  ThinkServer 3.5" 1TB 7.2K SAS 6Gbps Hot Swap Hard Drive 0C19530  ThinkServer 3.5" 2TB 7.2K SAS 6Gbps Hot Swap Hard Drive 0C19531
ThinkServer 3.5" 500GB 7.2K Enterprise SATA 6Gbps Hot Swap Hard Drive 0A89473 ThinkServer 3.5" 1TB 7.2K Enterprise SATA 6Gbps Hot Swap Hard Drive 0A89474 ThinkServer 3.5" 2TB 7.2K Enterprise SATA 6Gbps Hot Swap Hard Drive 0A89475 ThinkServer 3.5" 3TB 7.2K Enterprise SATA 6Gbps Hot Swap Hard Drive 0A89477 ThinkServer 3.5" 4TB 7.2K Enterprise SATA 6Gbps Hot Swap Hard Drive 0C19520 3.5" SAS Hard Drive 0C19530 ThinkServer 3.5" 1TB 7.2K SAS 6Gbps Hot Swap Hard Drive 0C19530
ThinkServer 3.5" 1TB 7.2K Enterprise SATA 6Gbps Hot Swap Hard Drive ThinkServer 3.5" 2TB 7.2K Enterprise SATA 6Gbps Hot Swap Hard Drive ThinkServer 3.5" 3TB 7.2K Enterprise SATA 6Gbps Hot Swap Hard Drive ThinkServer 3.5" 4TB 7.2K Enterprise SATA 6Gbps Hot Swap Hard Drive ThinkServer 3.5" 4TB 7.2K Enterprise SATA 6Gbps Hot Swap Hard Drive ThinkServer 3.5" 4TB 7.2K Enterprise SATA 6Gbps Hot Swap Hard Drive ThinkServer 3.5" 1TB 7.2K SAS 6Gbps Hot Swap Hard Drive ThinkServer 3.5" 1TB 7.2K SAS 6Gbps Hot Swap Hard Drive ThinkServer 3.5" 1TB 7.2K SAS 6Gbps Hot Swap Hard Drive ThinkServer 3.5" 1TB 7.2K SAS 6Gbps Hot Swap Hard Drive ThinkServer 3.5" 1TB 7.2K SAS 6Gbps Hot Swap Hard Drive
ThinkServer 3.5" 2TB 7.2K Enterprise SATA 6Gbps Hot Swap Hard Drive ThinkServer 3.5" 3TB 7.2K Enterprise SATA 6Gbps Hot Swap Hard Drive Olisk drive options Olisk driv
ThinkServer 3.5" 3TB 7.2K Enterprise SATA 6Gbps Hot Swap Hard Drive ThinkServer 3.5" 4TB 7.2K Enterprise SATA 6Gbps Hot Swap Hard Drive 0C19520 3.5" SAS Hard Drive ThinkServer 3.5" 1TB 7.2K SAS 6Gbps Hot Swap Hard Drive 0C19530
ThinkServer 3.5" 4TB 7.2K Enterprise SATA 6Gbps Hot Swap Hard Drive  3.5" SAS Hard Drive  ThinkServer 3.5" 1TB 7.2K SAS 6Gbps Hot Swap Hard Drive  OC19520  ThinkServer 3.5" 1TB 7.2K SAS 6Gbps Hot Swap Hard Drive  OC19530
Disk drive options or 3.5" SAS Hard Drive  3.5" SAS Hard Drive  ThinkServer 3.5" 1TB 7.2K SAS 6Gbps Hot Swap Hard Drive  0C19530
ThinkServer 3.5" 1TB 7.2K SAS 6Gbps Hot Swap Hard Drive 0C19530
2 ·· 0 EI/40 ·· 0 EI/
ThinkServer 3.5" 3TB 7.2K SAS 6Gbps Hot Swap Hard Drive 0C19532
ThinkServer 3.5" 300GB 15K SAS 6Gbps Hot Swap Hard Drive 67Y2616
ThinkServer 3.5" 600GB 15K SAS 6Gbps Hot Swap Hard Drive 4XB0F2864
2.5" SSD for 3.5" disk bay
ThinkServer 2.5" 100GB MLC SATA Solid State Drive to 3.5" Kit 0C19571
ThinkServer 2.5" 200GB MLC SATA Solid State Drive to 3.5" Kit 0C19572
ThinkServer 2.5" 400GB MLC SATA Solid State Drive to 3.5" Kit 0C19573
Hot-swap disk drive options for 2.5" bay Part Numbe
2.5" SATA Hard Drive
ThinkServer 2.5" 500GB 7.2K Enterprise SATA 6Gbps Hot Swap Hard Drive 0C19495
ThinkServer 2.5" 1TB 7.2K Enterprise SATA 6Gbps Hot Swap Hard Drive 0C19496
2.5" SAS Hard Drive
ThinkServer 2.5" 300GB 10K SAS 6Gbps Hot Swap Hard Drive 67Y2619
ThinkServer 2.5" 600GB 10K SAS 6Gbbs Hot Swap Hard Drive 67Y2621
3 x 2.5"/16 x 2.5")  ThinkServer 2.5" 900GB 10K SAS 6Gbps Hot Swap Hard Drive 0A89409
ThinkServer 2.5" 300GB 15K SAS 6Gbps Hot Swap Hard Drive 0C19494
2.5" SSD
ThinkServer 2.5" 100GB MLC SATA Solid State Drive 0A89420
ThinkServer 2.5" 200GB MLC SATA Solid State Drive 0A89418
ThinkServer 2.5" 400GB MLC SATA Solid State Drive 0A89419
RAID controller and RAID upgrade options Part Numbe
ThinkServer RAID 300 Upgrade Key for Advanced RAID 0A89422
ThinkServer RAID 500 Adapter II 0A89464
ThinkServer RAID 500 Upgrade Key for Advanced RAID 0A89407
ThinkServer RAID 700 Adapter II 0A89463
ThinkServer RAID 700 Battery 67Y2647
ThinkServer RAID 710 Adapter 0C19489
ThinkServer RAID Super Capacitor Module 0C19490
ThinkServer RAID FastPath Software Key 0C19491
ThinkServer RAID CacheCade Pro 2.0 Software Key 0C19492

### ThinkServer RD340 Optional Configurations - Network, System Management, Power Supply

	Network and HBA options	Part Number					
	ThinkServer 1Gbps Ethernet I350-T2 Server Adapter by Intel	0C19506					
	ThinkServer 1Gbps Ethernet I350-T4 Server Adapter by Intel	0C19507					
	Lenovo 10Gbps Ethernet X540-T2 Server Adapter by Intel	0C19497					
letwork and HBA	Lenovo 10Gbps Ethernet X520-DA2 Server Adapter by Intel	0C19486					
options	Lenovo 10Gbps Ethernet Fiber Module by Intel	0C19488					
	Lenovo 10Gbps Ethernet X520-SR2 Server Adapter by Intel	0C19487					
	ThinkServer QLE8242-CU-CK Dual Port CNA by QLogic	0C19483					
	ThinkServer LPe1250 Single Port 8Gb Fibre Channel HBA by Emulex						
	ThinkServer LPe12002 Dual Port 8Gb Fibre Channel HBA by Emulex	0C19478					
	ThinkServer QLE2562 Dual Port 8Gb Fibre Channel HBA by Qlogic	0C19482					
a aurity antions	Trusted Platform Module options	Part Number					
ecurity options	ThinkServer Trusted Platform Module	0A89428					
	System Management option for iKVM	Part Number					
ystems management	ThinkServer Management Module Premium	67Y2624					
otions	Cable Management option	Part Number					
	ThinkServer Cable management Arm	0A89476					
		-					
ower ownsk entions	Power supply option	Part Number					
ower supply options	ThinkServer 550W Gold Hot Swap Redundant Power Supply	4X20E54689					

### ThinkServer RD340 Operating System and Virtualization Supportability Matrix

List of operating system and virtualization software supported on ThinkServer RD340

Windows Server 2008 Standard Edition (x86)	List of operating system and virtualization software supported on minks	T TIBO	10		I
Windows Server 2008 Standard Edition (x86)	Operating System/Virtualization	Certified	Support ROK		Preloaded
Windows Server 2008 Experies Edition (x86)	, ,			EasyStartup	
Windows Server 2008 Enterprise Edition (x86)		tion	T		,
Windows Server 2008 Batacenter Edition (x86)				-	
Windows Server 2008 Standard Edition (x64) (including Hyper-V) Windows Server 2008 Enterprise Edition (x64) (including Hyper-V) Windows Server 2008 Enterprise Edition (x64) (including Hyper-V) Windows Server 2008 Enterprise Edition (x64) (including Hyper-V) Windows Server 2008 Standard Edition 12 with SP1 (including Hyper-V) Windows Server 2008 Enterprise Edition R2 with SP1 (including Hyper-V) Windows Server 2008 Batacenter Edition R2 with SP1 (including Hyper-V) Windows Server 2008 Batacenter Edition R2 with SP1 (including Hyper-V) Windows Server 2008 Batacenter Edition R2 with SP1 (including Hyper-V) Windows Server 2008 Batacenter Edition R2 with SP1 (including Hyper-V) Windows Server 2010 Batacenter Edition R2 with SP1 (including Hyper-V) Windows Small Business Server 2011 Essentials Windows Small Business Server 2011 Essentials Windows Server 2012 Standard (including Hyper-V) Windows Server 2012 Estandard (including Hyper-V) Windows Server 2012 Estandard (including Hyper-V) Windows Server 2012 Expertials Windows Server 2012 R2 Essentials W				•	
Windows Server 2008 Standard Edition (x64) (including Hyper-V)				•	
Windows Server 2008 Enterprise Edition (x64) (including Hyper-V)   .   .		1			,
Windows Server 2018 Datacenter Edition (x64) (including Hyper-V)	Windows Server 2008 Standard Edition (x64) (including Hyper-V)			•	
Windows Server 2008 Standard Edition R2 with SP1 (including Hyper-V)		•			
Windows Server 2008 Standard Edition R2 with SP1 (including Hyper-V)		•		•	
Windows Server 2008 Enterprise Edition R2 with SP1 (including Hyper-V)		ith SP1			
Windows Server 2008 Datacenter Edition R2 with SP1 (including Hyper-V)		•	•	•	
Windows Small Business Server 2011 Essentials		•	•	•	
Windows Small Business Server 2011 Essentials	Windows Server 2008 Datacenter Edition R2 with SP1 (including Hyper-V)	•	•	•	
Windows Small Business Server 2011 Standard	Windows Small Business Serve	2011			
Windows Small Business Server Premium Add-On (including Hyper-V)	Windows Small Business Server 2011 Essentials	•		•	
Windows Server 2012 Standard (including Hyper-V)	Windows Small Business Server 2011 Standard	•	•	•	
Windows Server 2012 Standard (including Hyper-V)	Windows Small Business Server Premium Add-On (including Hyper-V)	•	•	•	
Windows Server 2012 Datacenter (including Hyper-V)					
Windows Server 2012 Essentials	Windows Server 2012 Standard (including Hyper-V)	•	•	•	•
Windows Server 2012 Hyper-V	Windows Server 2012 Datacenter (including Hyper-V)	•	•	•	•
Windows Server 2012 R2 Standard (including Hyper-V)	Windows Server 2012 Essentials	•	•	•	•
Windows Server 2012 R2 Standard (including Hyper-V)	Windows Server 2012 Hyper-V	•		•	
Windows Server 2012 R2 Datacenter (including Hyper-V)		*			,
Windows Server 2012 R2 Essentials	Windows Server 2012 R2 Standard (including Hyper-V)	•	•	•	•
Windows Server 2012 R2 Essentials		•	•	•	•
SUSE Linux Enterprise Server 10 sp4   SUSE Linux Enterprise Server x86		•	•	•	•
SUSE Linux Enterprise Server x86   SUSE Linux Enterprise Server x86   SUSE Linux Enterprise Server 10 sp4   SUSE Linux Enterprise Server 11 sp2   SUSE Linux Enterprise Server 11 sp3   SUSE Linux Enterprise Server x64   SUSE Linux Enterprise Server x64   SUSE Linux Enterprise Server 10 sp4   SUSE Linux Enterprise Server x64   SUSE Linux Enterprise Server 11 sp2   SUSE Linux Enterprise Server x64   SUSE Linux Enterprise Server 11 sp2   SUSE Linux Server (RHEL) x86   SUSE Linux Enterprise Server x64   SUSE Linux Enterprise Linux Server (RHEL) x86   SUSE Linux Enterprise Linux Server x64   SUSE Linux Enterprise Linux Enterprise Linux Server x64   SUSE Linux Enterprise Linu		•		•	
SUSE Linux Enterprise Server 10 sp4 SUSE Linux Enterprise Server 11 sp2 SUSE Linux Enterprise Server 11 sp3 SUSE Linux Enterprise Server 10 sp4 SUSE Linux Enterprise Server 10 sp4 SUSE Linux Enterprise Server 10 sp4 SUSE Linux Enterprise Server 11 sp2 RedHat Enterprise Linux Server (RHEL) x86 RHEL 5.9 RHEL 5.10 RHEL 6.4 RHEL 6.5 RHEL 5.9 RedHat Enterprise Linux Server x64 RHEL 5.9 RHEL 5.10 RHEL 5.10 RHEL 6.5 Vmware x64 Vmware ESXi 5.1 U1 Vmware ESXi 5.1 U1 Vmware ESXi 5.5 Microsoft Hyper V Microsoft Hyper-V server 2008 Microsoft Hyper-V server 2008 R2 SP1 Citrix XenServer 6.1 Citrix XenServer 6.0.2  • • • • • • • • • • • • • • • • • • •		x86	<u>'</u>	·	
SUSE Linux Enterprise Server 11 sp2 SUSE Linux Enterprise Server 11 sp3  SUSE Linux Enterprise Server x64  RedHat Enterprise Linux Server (RHEL) x86  RHEL 5.9 RHEL 5.10 RHEL 6.4 RHEL 5.9 RedHat Enterprise Linux Server x64  RHEL 5.9 RHEL 5.10 RHEL 5.10 RHEL 6.4 RHEL 6.5 Vmware x64  Vmware ESXi 5.1 U1 Vmware ESXi 5.1 U1 Vmware ESXi 5.5 Microsoft Hyper V  Microsoft Hyper-V server 2008 Microsoft Hyper-V server 2008 Microsoft Hyper-V server 2008 R2 SP1  Citrix XenServer 6.1 Citrix XenServer 6.0.2  • • • • • • • • • • • • • • • • • • •				•	
SUSE Linux Enterprise Server 11 sp3  SUSE Linux Enterprise Server x64  SUSE Linux Enterprise Server 10 sp4 SUSE Linux Enterprise Server 11 sp2  RedHat Enterprise Linux Server (RHEL) x86  RHEL 5.9 RHEL 5.10 RHEL 6.5 REDEATOR OF THE CONTROL OF THE		•		•	
SUSE Linux Enterprise Server x64   SUSE Linux Enterprise Server x64   SUSE Linux Enterprise Server 10 sp4   SUSE Linux Enterprise Server 11 sp2   Server 11 sp2   Server (RHEL) x86   RHEL 5.9   RedHat Enterprise Linux Server (RHEL) x86   Server x64		•		•	
SUSE Linux Enterprise Server 10 sp4 SUSE Linux Enterprise Server 11 sp2  RedHat Enterprise Linux Server (RHEL) x86 RHEL 5.9 RHEL 5.10 RHEL 6.4 RHEL 6.5 RedHat Enterprise Linux Server x64 RHEL 5.9 RedHat Enterprise Linux Server x64 RHEL 5.10 RHEL 5.10 RHEL 6.4 RHEL 6.5 Vmware x64 Vmware ESXi 5.1 U1 Vmware ESXi 5.1 U1 Vmware ESXi 5.5 Microsoft Hyper V Microsoft Hyper-V server 2008 Microsoft Hyper-V server 2008 R2 SP1 Citrix XenServer 6.1 Citrix XenServer 6.0.2  *  *  RedHat Enterprise Linux Server (RHEL) x86 *  *  *  *  *  *  *  *  *  *  *  *  *		x64	L	1	
SUSE Linux Enterprise Server 11 sp2		1		•	
RedHat Enterprise Linux Server (RHEL) x86   RHEL 5.9		•		•	
RHEL 5.9 RHEL 5.10 RHEL 6.4 RHEL 6.5 RedHat Enterprise Linux Server x64 RHEL 5.9 RHEL 5.10 RHEL 5.10 RHEL 5.10 RHEL 6.4 RHEL 6.5 Vinware x64  Vmware ESXi 5.1 U1 Vmware ESXi 5.5 Microsoft Hyper V Microsoft Hyper-V server 2008 Microsoft Hyper-V server 2008 R2 SP1 Citrix XenServer 6.1 Citrix XenServer 6.0.2  • • • • • • • • • • • • • • • • • • •		HFI ) x86			-
RHEL 5.10 RHEL 6.4 RHEL 6.5 RedHat Enterprise Linux Server x64 RHEL 5.9 RHEL 5.10 RHEL 6.4 RHEL 6.5 Vmware x64 Vmware ESXi 5.1 U1 Vmware ESXi 5.5 Microsoft Hyper V Microsoft Hyper-V server 2008 Microsoft Hyper-V server 2008 R2 SP1 Citrix XenServer 6.1 Citrix XenServer 6.0.2  • • • • • • • • • • • • • • • • • • •		•			1
RHEL 6.4 RHEL 6.5  RedHat Enterprise Linux Server x64 RHEL 5.9 RHEL 5.10 RHEL 6.4 RHEL 6.5  Vmware x64  Vmware ESXi 5.1 U1 Vmware ESXi 5.5  Microsoft Hyper-V server 2008 Microsoft Hyper-V server 2008 R2 SP1  Citrix XenServer 6.1 Citrix XenServer 6.0.2		•		•	
RHEL 6.5  RedHat Enterprise Linux Server x64  RHEL 5.9  RHEL 5.10  RHEL 6.5  RHEL 6.5  Vmware x64  Vmware ESXi 5.1 U1  Vmware ESXi 5.5  Microsoft Hyper-V server 2008  Microsoft Hyper-V server 2008 R2 SP1  Citrix XenServer 6.1  Citrix XenServer 6.0.2					
RedHat Enterprise Linux Server x64					
RHEL 5.9 RHEL 5.10 RHEL 6.4 RHEL 6.5 Vmware x64 Vmware ESXi 5.1 U1 Vmware ESXi 5.5 Microsoft Hyper V Microsoft Hyper-V server 2008 Microsoft Hyper-V server 2008 R2 SP1 Citrix XenServer 6.1 Citrix XenServer 6.0.2  • • • • • • • • • • • • • • • • • • •		r v61			
RHEL 5.10 RHEL 6.4 RHEL 6.5 Vmware x64 Vmware ESXi 5.1 U1 Vmware ESXi 5.5 Microsoft Hyper V Microsoft Hyper-V server 2008 Microsoft Hyper-v server 2008 R2 SP1 Citrix XenServer 6.1 Citrix XenServer 6.0.2  • • • • • • • • • • • • • • • • • •		1			1
RHEL 6.4 RHEL 6.5  Vmware x64  Vmware ESXi 5.1 U1  Vmware ESXi 5.5  Microsoft Hyper V  Microsoft Hyper-V server 2008 Microsoft Hyper-V server 2008 R2 SP1  Citrix XenServer 6.1  Citrix XenServer 6.0.2		-		-	
Name		-			
Vmware x64   Vmware x64					
Vmware ESXi 5.1 U1       •       •       •         Vmware ESXi 5.5       •       •       •         Microsoft Hyper V         Microsoft Hyper-V server 2008       •       •       •         Microsoft Hyper-V server 2008 R2 SP1       •       •       •         Citrix         Citrix XenServer 6.1       •       •       •         Citrix XenServer 6.0.2       •       •       •		•		•	
Vmware ESXi 5.5         •         •         •           Microsoft Hyper V           Microsoft Hyper-V server 2008         •         •         •           Microsoft Hyper-V server 2008 R2 SP1         •         •         •           Citrix           Citrix XenServer 6.1         •         •         •           Citrix XenServer 6.0.2         •         •         •				_	_
Microsoft Hyper V   Microsoft Hyper V			-		-
Microsoft Hyper-V server 2008		•	•	•	•
Microsoft Hyper-v server 2008 R2 SP1			I		1
Citrix           Citrix XenServer 6.1         •					
Citrix XenServer 6.1         •         •           Citrix XenServer 6.0.2         •         •		•		•	
Citrix XenServer 6.0.2		T -		-	
		-		-	
	Note:	•		•	L

Note:

• For more information on ThinkServer operating system and virtualization software, please visit ThinkServer Software page: http://shop.lenovo.com/us/en/servers/thinkserver/server-software.html

For ThinkServer operating system and virtualization software options, please visit ThinkServer OS and virtualization Options document: http://www.lenovo.com/images/products/server/pdfs/datasheets/ThinkServer\_OS\_&\_Virtualization\_Options\_Datasheet.pdf

### **ThinkServer RD340 Services Upgrade Options**

Partial list of Lenovo Services for ThinkServer RD340 models with 3-year onsite base warranty

For more information see: http://www.lenovo.com/services\_warranty/us/en/lenovo-warranty.html

Upgrade Service Description Part Number										
	Part Number									
Warranty	EM00E45450									
3YR Onsite 24x7x4 Hour Response	5WS0F15458									
3YR Onsite 24x7x8 Hour Response	5WS0F15392									
3YR Onsite 9x5x4 Hour Response	5WS0F15355									
4YR Onsite 24x7x4 Hour Response	5WS0F15443									
4YR Onsite 24x7x8 Hour Response	5WS0F15395									
4YR Onsite 9x5x4 Hour Response	5WS0F15394									
4YR Onsite NBD	5WS0F15415									
5YR Onsite 24x7x4 Hour Response 5YR Onsite 24x7x8 Hour Response	5WS0F15377 5WS0F15440									
5YR Onsite 9x5x4 Hour Response	5WS0F15440									
5YR Onsite NBD	5WS0F15430									
Keep Your Drive (KYD) Service	5W50F15419									
3YR Keep Your Drive	5PS0F15436									
3YR Onsite 24x7x4 Hour Response + KYD	5PS0F15376									
3YR Onsite 24x7x4 Hour Response + KYD	5PS0F15376									
3YR Onsite 9x5x4 Hour Response + KYD										
4YR Onsite 24x7x4 Hour Response + KYD	5PS0F15448 5PS0F15389									
4YR Onsite 24x7x8 Hour Response + KYD	5PS0F15359									
4YR Onsite 9x5x4 Hour Response + KYD	5PS0F15456									
4YR Onsite NBD + KYD	5PS0F15459									
5YR Onsite 24x7x4 Hour Response + KYD	5PS0F15402									
5YR Onsite 24x7x8 Hour Response + KYD	5PS0F15381									
5YR Onsite 9x5x4 Hour Response + KYD	5PS0F15366									
5YR Onsite NBD + KYD Priority Technical Support	5PS0F15391									
3YR KYD + Priority Support	5PS0F15417									
3YR Onsite 24x7x4 Hour Response + KYD + Priority Support	5PS0F15352									
3YR Onsite 24x7x4 Hour Response + Priority Support	5WS0F15399									
3YR Onsite 24x7x8 Hour Response + KYD + Priority Support	5PS0F15444									
3YR Onsite 24x7x8 Hour Response + Priority Support	5WS0F15418									
3YR Onsite 9x5x4 Hour Response + KYD + Priority Support	5PS0F15398									
3YR Onsite 9x5x4 Hour Response + Priority Support	5WS0F15468									
3YR Priority Support	5WS0E76471									
4YR Onsite 24x7x4 Hour Response + KYD + Priority Support	5PS0F15462									
4YR Onsite 24x7x4 Hour Response + Priority Support	5WS0F15410									
4YR Onsite 24x7x4 Hour Response + KYD + Priority Support	5PS0F15433									
4YR Onsite 24x7x8 Hour Response + Priority Support	5WS0F15425									
4YR Onsite 9x5x4 Hour Response + KYD + Priority Support	5PS0F15400									
4YR Onsite 9x5x4 Hour Response + Priority Support	5WS0F15351									
4YR Onsite NBD + KYD + Priority Support	5PS0F15373									
4YR Onsite NBD + Priority Support	5WS0F15401									
4YR Priority Support	5WS0E77170									
5YR Onsite 24x7x4 Hour Response + KYD + Priority Support	5PS0F15350									
5YR Onsite 24x7x4 Hour Response + Priority Support	5WS0F15412									
5YR Onsite 24x7x4 Hour Response + KYD + Priority Support	5PS0F15471									
5YR Onsite 24x7x8 Hour Response + Priority Support	5WS0F15447									
5YR Onsite 9x5x4 Hour Response + KYD + Priority Support	5PS0F15437									
5YR Onsite 9x5x4 Hour Response + Priority Support	5WS0F15382									
5YR Onsite NBD + KYD + Priority Support	5PS0F15388									
5YR Onsite NBD + Priority Support	5WS0F15463									
5YR Priority Support	5WS0E77173									
OTITI Honey Support	0.700E77170									

r	Upgrade Service Description	Part Number
	Post Warranty	
8	1YR Onsite 24x7x4 Hour Response	5WS0F15435
2	1YR Onsite 24x7x4 Hour Response + Priority Support	5WS0F15370
5	1YR Onsite 24x7x8 Hour Response	5WS0F15427
3	1YR Onsite 24x7x8 Hour Response + Priority Support	5WS0F15361
5	1YR Onsite 9x5x4 Hour Response	5WS0F15416
4	1YR Onsite 9x5x4 Hour Response + Priority Support	5WS0F15348
5 7	1YR Onsite NBD	5WS0F15407
	1YR Onsite NBD + Priority Support	5WS0F15465
0	TopSeller Priority (TopSeller models only)	
0	3YR Onsite 24x7x4 Hour Response	5WS0D73789
9	3YR Onsite 9x5x4 Hour Response	5WS0D73787
	4YR Onsite 24x7x4 Hour Response	5WS0D73792
6	4YR Onsite 9x5x4 Hour Response	5WS0D73791
6	4YR Onsite NBD	5WS0F15470
9	3YR Onsite 24x7x4 Hour Response+Priority Support	5WS0F15414
8	3YR Onsite 9x5x4 Hour Response+Priority Support	5WS0F15423
9	3YR Priority Support	5WS0E76457
9	4YR Priority Support	5WS0E76482

#### Note:

### 24x7x4: 4 Hour Onsite Response Time in 24x7 Service Window (requires Location Activation)

- 24 hours a day, 7 days a week, including nights and weekends
- Once the need for on-site presence is confirmed, an on-site technician is dispatched to arrive within 4 hours.
- Best coverage for business critical work loads

### 9x5x4: 4 Hour Onsite Response Time in 9x5 Service Window (requires Location Activation)

• Once the need for on-site presence is confirmed, an on-site technician is dispatched to arrive within 4 hours.

### 24x7x8: 8 Hour Onsite Response Time in 24x7 Service Window (requires Location Activation) • 24 hours a day, 7 days a week, including nights and weekends

 Once the need for on-site presence is confirmed, an on-site technician is dispatched to arrive within 8 hours.

#### Priority Technical Support

Lenovo's Priority Technical Support provides direct access to an advanced level technician supporting all of hardware, operating system and software needs related to server issues, available 24 hours a day, 7 days a week.

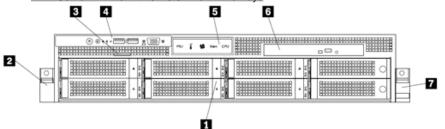
#### Keep Your Drive (KYD) Service

Retain drive (hard drive or SSD) and confidential data if the drive must be replaced. To confirm if 4hr services are available in a specified location, please use ThinkServer Service Availability Tool: http://www.lenovo.com/services\_warranty/us/en/locator.html Once purchased, to activate the location of your 4hr/8hr ThinkServer Service, please use ThinkServer Service Activation page: http://www.lenovo.com/activation

### ThinkServer RD440 Overview

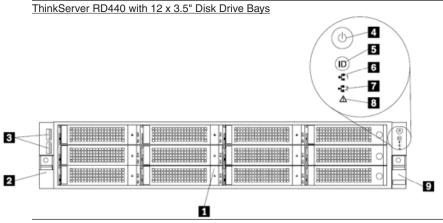
### Front view - ThinkServer RD440 supports the following disk bay configurations:



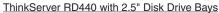


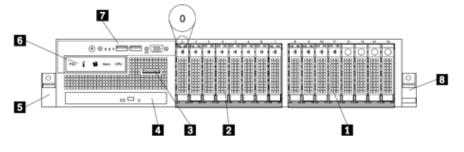
- 8 x 3.5" hot-swap disk drive bays
- Rack handle (left)
- Pull-out information card 3.
- Front panel
- Power Button with LED
- ID button with LED
- 2 Network interface status LEDs
- System error LED
- 2 USB 2.0
- 1 VGA

- 5. Intelligent Diagnostics Module (optional) 6. Slim optical drive (optional)
  7. Rack handle (right)



- 12 x 3.5" hot-swap disk drive bays
- Rack handle (left) 2.
- 3. 2 USB 2.0
- Power Button with LED
- ID button with LED
- Network interface status LED 1
- Network interface status LED 2
- System error LED
- Rack handle (right)

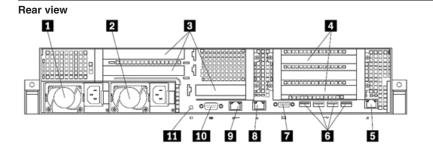




- 1. 8 x hot-swap disk drive bays (for 16x2.5" hard drive bays model) 8 x Hot-swap disk drive bays Pull-out information card

- Slim optical drive (optional)
- Rack handle (left)
- Intelligent Diagnostics Module (basic or premium, optional)
- Front panel
  - Power Button with LED
  - ID button with LED
  - 2 Network interface status LEDsSystem error LED

  - 2 USB 2.0
  - 1 VGA
- 8. Rack handle (right)



- Hot-swap redundant power supply 2 (optional) Hot-swap redundant power supply 1 Three PCI Express slots by riser card 2

- Two PCI Express slots by riser card 1 Ethernet 2 (RJ-45)
- 5.
- Four USB 2.0 6.
- 7. VGA DB-15 connector
- Ethernet 1 (RJ-45)
- Dedicate/share management connector (RJ-45)
- 10. Serial
- 11. ID LED

Type- model <sup>1</sup>	Intel Xeon Processor	2nd CPU	Memory	Disk Bays	RAID controller	Storage	Slim optical	Discrete ethernet	Intelligent Diagnostics				TPM module	Preloaded OS	Base warranty (-year, on-site)
70AH001QUX	Xeon E5-2403 v2 4C/1.8GHz/10MB/1333MHz	No	8GBx1 1600MHz LVRDIMM	8X3.5" HS	RAID300	Open	DVD±RW	No	IDM Premium	IPMI	No	1	TPM	No	3
70AH001RUX	Xeon E5-2407 v2 4C/2.4GHz/10MB/1333MHz	No	8GBx1 1600MHz LVRDIMM	8X3.5" HS	RAID300	Open	DVD±RW	No	IDM Premium	IPMI	No	1	TPM	No	3
70AH001SUX	Xeon E5-2420 v2 6C/2.2GHz/15MB/1600MHz	No	8GBx1 1600MHz LVRDIMM	8X3.5" HS	RAID300	Open	DVD±RW	No	IDM Premium	IPMI	No	1	TPM	No	3
70AH001TUX	Xeon E5-2430 v2 6C/2.5GHz/15MB/1600MHz	No	8GBx1 1600MHz LVRDIMM	8X3.5" HS	RAID300	Open	DVD±RW	No	IDM Premium	IPMI	No	1	TPM	No	3
70AH001UUX	Xeon E5-2440 v2 8C/1.9GHz/20MB/1600MHz	No	8GBx1 1600MHz LVRDIMM	8X3.5" HS	RAID300	Open	DVD±RW	No	IDM Premium	IPMI	No	1	TPM	No	3
70AH001VUX	Xeon E5-2450 v2 8C/2.5GHz/20MB/1600MHz	No	8GBx1 1600MHz LVRDIMM	8X3.5" HS	RAID300	Open	DVD±RW	No	IDM Premium	IPMI	No	1	TPM	No	3
70AH001WUX	Xeon E5-2470 v2 10C/2.4GHz/25MB/1600MHz	No	8GBx1 1600MHz LVRDIMM	8X3.5" HS	RAID300	Open	DVD±RW	No	IDM Premium	IPMI	No	1	TPM	No	3

<sup>1.</sup> Model in italics is Global model 2. By default, the voltage of LV RDIMM is 1.5V and can be changed to 1.35V in BIOS setting

- For detailed platform specifications, please see <u>ThinkServer RD440 Platform Specifications</u> sheets
   For optional configurations of ThinkServer RD340, please see <u>ThinkServer RD440 Optional Configurations</u> sheets

	<ul><li>2U rack with rail kit</li><li>19" W x 28.9" D x 3.45" H (with rack handles)</li></ul>	Cable mgmt (opt) Optional cable management arm on selected models								
Mechanical	482.4mm W x 734mm D x 87.6mm H (with rack handles)     26.5 kg (58.42 lb) when fully configured	Power supply  One or two 800 watts standard, two maximum, rear access, hot-swap, 80 PLUS Gold qualified, redundant with two power supplies								
Chipset	Intel C606 Chipset, two LGA1356 sockets for processors	Security features   Power-on password/administrator password, (TPM is optional)   Trusted Platform Module (TCG 1.2-compliant) on selected models								
Memory DIMMs	Twelve DIMM sockets, six DIMM sockets per processor	Environmental • Energy Star Server 2.0 qualified • RoHS-compliant								
Memory protection	ECC, memory mirroring, memory sparing									
	RAID adapter RAID support Cache Transfer rates Optional upgrades	8 x 3.5"								
	RAID 300* (onboard) 0, 1, 10 6Gb/s optional upgrade key, add RAID 5 support	Power supply  Po								
	RAID 500 (LSI 9240-8i) 0, 1, 10 6Gb/s optional upgrade key, add RAID 5, 50 support	12 x 3.5"								
RAID support	RAID 700 (LSI 9260-8i) 0, 1, 10, 5, 50, 6, 60 512MB 6Gb/s optional intelligent Battery Bac Unit (iBBU08)	up      •								
	RAID 710 (LSI 9270CV-8i) 0, 1, 10, 5, 50, 6, 60 1GB 6Gb/s optional CacheVault (CV) flash cache with super capac optional CacheCade Pro 2.0 optional FastPath key	Or   CPU1   CPU1   CPU2   CPU2								
	**RAID 300 is supported on 8 x 3.5" and 8 x 2.5" models only	Disk Bay								
Optical drive (optional)	8 x 3.5"/8 x 2.5"/16 x 2.5": one slim optical bay, supports one slim optical 12 x 3.5": one optical bay, external USB optical is neede	disks and optical* area								
Onboard network	Two Gigabit Ethernet ports by Intel i350, one Gigabit Ethernet port by Intel 82574L, dedicate/share management	* Slim optical bay is not available on 12 x 3.5" models  **Rear*    S-PCle x16   T-PCle x16   T-								
Discrete network (optional)	Supports the following Intel Server Adapter options on selected models: 1Gbps: 350-T2/l350-T4 10Gbps: X520-SR2/X520-DA2/X540-T2/Fiber Module for X520-DA2	6 - PCle x8								
Intelligent Diagnostics Module (optional)	Supports optional Intelligent Diagnostics Module (IDM) or IDM Premium or selected 8 x 3.5"/8 x 2.5"/16 x 2.5" models, IDM LED lights indicate failing component category, IDM Premium LED lights indicate individual failing part	Expansion Slots:  Up to six PCI-Express slots via two riser cards, riser card 1 for slot 1-3, riser card 2 for slot 4-6: Slot 1: half-length, full-height, PCIe 3.0 x16 (x8 elec) Slot 2: half-length, full-height, PCIe 3.0 x8 Slot 3: half-length, full-height, PCIe 2.0 x8 (x4) Slot 4: Low Profile, PCIe 3.0 x8 (x4 elec) Slot 5: half-length, full-height, PCIe 3.0 x16 (x8 elec) Slot 5: half-length, full-height, PCIe 3.0 x16 (x8 elec) Slot 6: half-length, full-height, PCIe 3.0 x8								
Systems management (iKVM is optional)	Onboard Aspeed AST2300 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC); optional ThinkServer Management Module Premium for iKVM functions     Control Panel LEDs shows the status of power, ID, network, system     Lenovo SmartGrid Manager     ThinkServer EasyStartup/EasyManage/EasyUpdate									
Cooling fans	5 fans, hot swap, 4 + 1 redundant									

Type- model <sup>1</sup>	Intel Xeon Processor	2nd CPU	Memory	Disk Bays	RAID controller	Storage	Slim optical	Discrete ethernet	Intelligent Diagnostics				TPM module	Preloaded OS	Base warranty (-year, on-site)
70AH001XUX	Xeon E5-2450 v2 8C/2.5GHz/20MB/1600MHz	No	8GBx1 1600MHz LVRDIMM	8X3.5" HS	RAID700	Open	DVD±RW	No	IDM Premium	IPMI	No	1	TPM	No	3
70AH001YUX	Xeon E5-2470 v2 10C/2.4GHz/25MB/1600MHz	No	8GBx1 1600MHz LVRDIMM	8X3.5" HS	RAID700	Open	DVD±RW	No	IDM Premium	IPMI	No	1	TPM	No	3
70AH0020UX	Xeon E5-2450 v2 8C/2.5GHz/20MB/1600MHz	No	8GBx1 1600MHz LVRDIMM	8X3.5" HS	RAID710	Open	DVD±RW	No	IDM Premium	IPMI	No	1	TPM	No	3
70AH0021UX	Xeon E5-2470 v2 10C/2.4GHz/25MB/1600MHz	No	8GBx1 1600MHz LVRDIMM	8X3.5" HS	RAID710	Open	DVD±RW	No	IDM Premium	IPMI	No	1	TPM	No	3
70AH0022UX	Xeon E5-2420 v2 6C/2.2GHz/15MB/1600MHz	2nd	8GBx8 1600MHz LVRDIMM	8X3.5" HS	RAID700	8x2TB 3.5" SAS	DVD±RW	350T2	IDM Premium	iKVM	No	1	TPM	No	3
70AH0023UX	Xeon E5-2450 v2 8C/2.5GHz/20MB/1600MHz	2nd	16GBx8 1600MHz LVRDIMM	8X3.5" HS	RAID710 +CacheVault	6x4TB 3.5" SATA	DVD±RW	350T4	IDM Premium	iKVM	No	1	TPM	No	3

<sup>1.</sup> Model in italics is Global model 2. By default, the voltage of LV RDIMM is 1.5V and can be changed to 1.35V in BIOS setting

- For detailed platform specifications, please see <u>ThinkServer RD440 Platform Specifications</u> sheets
   For optional configurations of ThinkServer RD340, please see <u>ThinkServer RD440 Optional Configurations</u> sheets

	2U rack with rail kit     19" W x 28.9" D x 3.45" H (with rack handles)	Cable mgmt (opt) Optional cable management arm on selected models							
Mechanical	482.4mm W x 734mm D x 87.6mm H (with rack handles)     26.5 kg (58.42 lb) when fully configured	Power supply  One or two 800 watts standard, two maximum, rear access, hot-swap, 80 PLUS Gold qualified, redundant with two power supplies							
Chipset	Intel C606 Chipset, two LGA1356 sockets for processors	Security features   Power-on password/administrator password, (TPM is optional)   Trusted Platform Module (TCG 1.2-compliant) on selected models							
Memory DIMMs	Twelve DIMM sockets, six DIMM sockets per processor	Environmental • Energy Star Server 2.0 qualified certifications • RoHS-compliant							
Memory protection	ECC, memory mirroring, memory sparing	The state of the s							
	RAID adapter RAID support Cache Transfer rates Optional upgrades	8 x 3.5"							
	RAID 300* (onboard) 0, 1, 10 6Gb/s optional upgrade key, add RAID 5 support	Riser card 2  Power supply  P							
	RAID 500 (LSI 9240-8i) 0, 1, 10 6Gb/s optional upgrade key, add RAID 5, 50 support	12 x 3.5"							
RAID support	RAID 700 (LSI 9260-8i) 0, 1, 10, 5, 50, 6, 60 512MB 6Gb/s optional intelligent Battery Backup Unit (iBBU08)								
	RAID 710 (LSI 9270CV-8i) 0, 1, 10, 5, 50, 6, 60 1 1GB 6Gb/s • optional CacheVault (CV) flash cache with super capacitor optional CacheCade Pro 2.0 • optional FastPath key	8 x 2.5"/16 x 2.5" (Bay 9-16 are available on 16 x 2.5" models)							
	**RAID 300 is supported on 8 x 3.5" and 8 x 2.5" models only	Disk Bay Disk Bay 9-16							
Optical drive (optional)	8 x 3.5"/8 x 2.5"/16 x 2.5": one slim optical bay, supports one slim optical 12 x 3.5": one optical bay, external USB optical is needed	disks and optical* area							
Onboard network	Two Gigabit Ethernet ports by Intel i350, one Gigabit Ethernet port by Intel 82574L, dedicate/share management	* Slim optical bay is not available on 12 x 3.5" models Fear  5 - PCle x16 1-PCle x16							
Discrete network (optional)	Supports the following Intel Server Adapter options on selected models: 1Gbps: 350-T2/l350-T4 10Gbps: X520-SR2/X520-DA2/X540-T2/Fiber Module for X520-DA2	6 - PCIe x8 2 - PCIe x8 4 - PCIe x8 3 - PCIe x8 PSU PSU 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0							
Intelligent Diagnostics Module (optional)	Supports optional Intelligent Diagnostics Module (IDM) or IDM Premium on selected 8 x 3.5"/8 x 2.5"/16 x 2.5" models, IDM LED lights indicate failing component category, IDM Premium LED lights indicate individual failing part	Expansion Slots:  Up to six PCI-Express slots via two riser cards, riser card 1 for slot 1-3, riser card 2 for slot 4-6: Slot 1: half-length, full-height, PCIe 3.0 x16 (x8 elec) Slot 2: half-length, full-height, PCIe 2.0 x8 (x4) Slot 3: half-length, full-height, PCIe 2.0 x8 (x4) Slot 4: Low Profile, PCIe 3.0 x8 (x4 elec) Slot 5-6 are available on dual processors models: Slot 5: half-length, full-height, PCIe 3.0 x16 (x8 elec) Slot 6: half-length, full-height, PCIe 3.0 x8							
Systems management (iKVM is optional)	Onboard Aspeed AST2300 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC); optional ThinkServer Management Module Premium for iKVM functions     Control Panel LEDs shows the status of power, ID, network, system     Lenovo SmartGrid Manager     ThinkServer EasyStartup/EasyManage/EasyUpdate								
Cooling fans	5 fans, hot swap, 4 + 1 redundant								

### ThinkServer RD440 (70AE) - January 2014

Type- model <sup>1</sup>	Intel Xeon Processor	2nd CPU	Memory	Disk Bays	RAID controller	Storage		l	Intelligent Diagnostics					Preloaded OS	Base warranty (-year, on-site)
70AE0000US	Xeon E5-2403 v2 4C/1.8GHz/10MB/1333MHz	2nd	16GBx12 1600MHz LVRDIMM	8X3.5" HS	RAID700	8x500GB 3.5" SATA(RAID60)	DVD±RW	X520DA2 +X540T2	IDM Premium	iKVM	Cable	1	TPM	2012 Standard	3

<sup>1.</sup> Model in italics is Global model 2. By default, the voltage of LV RDIMM is 1.5V and can be changed to 1.35V in BIOS setting

- For detailed platform specifications, please see <u>ThinkServer RD440 Platform Specifications</u> sheets
   For optional configurations of ThinkServer RD340, please see <u>ThinkServer RD440 Optional Configurations</u> sheets

	2U rack with rail kit     19" W x 28.9" D x 3.45" H (with rack handles)	Cable mgmt (opt) Optional cable management arm on selected models
Mechanical	482.4mm W x 734mm D x 87.6mm H (with rack handles)     26.5 kg (58.42 lb) when fully configured	Power supply  One or two 800 watts standard, two maximum, rear access, hot-swap, 80 PLUS Gold qualified, redundant with two power supplies
Chipset	Intel C606 Chipset, two LGA1356 sockets for processors	Security features   Power-on password/administrator password, (TPM is optional)   Trusted Platform Module (TCG 1.2-compliant) on selected models
Memory DIMMs	Twelve DIMM sockets, six DIMM sockets per processor	Environmental • Energy Star Server 2.0 qualified • RoHS-compliant
Memory protection	ECC, memory mirroring, memory sparing	The state of the s
	RAID adapter RAID support Cache Transfer rates Optional upgrades	8 x 3.5"
	RAID 300* (onboard) 0, 1, 10 6Gb/s optional upgrade key, add RAID 5 support	Riser card 2 2 Power supply
	RAID 500 (LSI 9240-8i)   0, 1, 10   6Gb/s   optional upgrade key, add RAID 5, 50 support	12 x 3.5"
RAID support	RAID 700 (LSI 9260-8i) 0, 1, 10, 5, 50, 6, 60 512MB 6Gb/s optional intelligent Battery Backul Unit (iBBU08)	
	RAID 710 (LSI 9270CV-8i) 0, 1, 10, 5, 50, 6, 60 1GB 6Gb/s • optional CacheVault (CV) flash cache with super capacitor optional CacheCade Pro 2.0 • optional FastPath key	CPU1   Res   CPU2   Res   CPU
	**RAID 300 is supported on 8 x 3.5" and 8 x 2.5" models only	:::: Disk Bay
Optical drive (optional)	8 x 3.5"/8 x 2.5"/16 x 2.5": one slim optical bay, supports one slim optical 12 x 3.5": one slim optical bay, external USB optical is needed	disks and optical* area optical optical
Onboard network	Two Gigabit Ethernet ports by Intel i350, one Gigabit Ethernet port by Intel 82574L, dedicate/share management	* Slim optical bay is not available on 12 x 3.5" models  **Fear*  5 - PCle x16   T - PCle x16
Discrete network (optional)	Supports the following Intel Server Adapter options on selected models: 1Gbps: 350-T2/l350-T4 10Gbps: X520-SR2/X520-DA2/X540-T2/Fiber Module for X520-DA2	6 - PCle x8 2 - PCle x8 2 - PCle x8 8 - PCle x8 9 - PCle x8
Intelligent Diagnostics Module (optional)	Supports optional Intelligent Diagnostics Module (IDM) or IDM Premium on selected 8 x 3.5"/8 x 2.5"/16 x 2.5" models, IDM LED lights indicate failing component category, IDM Premium LED lights indicate individual failing part	Expansion Slots:  Up to six PCI-Express slots via two riser cards, riser card 1 for slot 1-3, riser card 2 for slot 4-6: Slot 1: half-length, full-height, PCIe 3.0 x16 (x8 elec)  Front/rear Ports: Front 1 VGA (for 6 x 2.5"/8 x 2.5" models), 2 USB 2.0 Rear: 4 USB 2.0, 1 serial (9-pin),
Systems management (iKVM is optional)	Onboard Aspeed AST2300 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC); optional ThinkServer Management Module Premium for iKVM functions     Control Panel LEDs shows the status of power, ID, network, system     Lenovo SmartGrid Manager     ThinkServer EasyStartup/EasyManage/EasyUpdate	Slot 1: half-length, full-height, PCle 3.0 x8 Slot 2: half-length, full-height, PCle 3.0 x8 Slot 3: half-length, full-height, PCle 2.0 x8 (x4) Slot 4: Low Profile, PCle 3.0 x8 (x4 elec) Slot 5-6 are available on dual processors models: Slot 5: half-length, full-height, PCle 3.0 x16 (x8 elec) Slot 6: half-length, full-height, PCle 3.0 x8
Cooling fans	5 fans, hot swap, 4 + 1 redundant	

## ThinkServer RD440 (70AF) - January 2014

Type- model <sup>1</sup>	Intel Xeon Processor	2nd CPU	Memory	Disk Bays	RAID controller	Storage		Intelligent Diagnostics					Preloaded OS	Base warranty (-year, on-site)
70AF0000US	Xeon E5-2470 v2 10C/2.4GHz/25MB/1600MHz	2nd	16GBx6 1600MHz LVRDIMM	12X3.5" HS	RAID700	6x500GB 3.5" SATA(RAID60) +6x1TB 3.5" SATA(RAID10)	X520DA2	N/A	iKVM	Cable	1	TPM	2012 Standard	3

<sup>1.</sup> Model in italics is Global model 2. By default, the voltage of LV RDIMM is 1.5V and can be changed to 1.35V in BIOS setting

- For detailed platform specifications, please see <u>ThinkServer RD440 Platform Specifications</u> sheets
   For optional configurations of ThinkServer RD340, please see <u>ThinkServer RD440 Optional Configurations</u> sheets

Mechanical Chipset	• 19" W x 28.9" D • 482.4mm W x 7 • 26.5 kg (58.42 l Intel C606 Chipse	734mm D	x 87.6m	ack Hallu					
Chipset	<del></del>	,	fully conf	m H (with figured	n rack handles)		80 PLU	S Gold	00 watts standard, two maximum, rear access, hot-swap, d qualified, redundant with two power supplies
		et, two LC			or processors				ssword/administrator password, orm Module (TCG 1.2-compliant) on selected models
Memory DIMMs	Twelve DIMM soc	ckets, six	DIMM so	ockets pe	r processor	Environmental certifications		y Star	r Server 2.0 qualified
Memory protection	ECC, memory mi	irroring, n	nemory s	sparing		Top	• none	s-comp	
	RAID adapter	RAID support	Cache	Transfer rates	Optional upgrades		ק	ק	Front: Supports the following disk bay configurations: 8 x 3.5"    Optical   Optical
	RAID 300* (onboard)	0, 1, 10		6Gb/s	optional upgrade key, add RAID 5 support	Riser card 2 Riser card 2 Riser card 1	Power supply	Power si	Disk Bay 1-8
	RAID 500 (LSI 9240-8i)	0, 1, 10		6Gb/s	optional upgrade key, add RAID 5, 50 support		ylddr	supply	12 x 3.5"
RAID support	RAID 700 (LSI 9260-8i)	0, 1, 10, 5, 50, 6, 60	512MB	6Gb/s	optional intelligent Battery Backup Unit (iBBU08)			88	Disk Bay 1-12
	RAID 710 (LSI 9270CV-8i)	0, 1, 10, 5, 50, 6, 60	1GB	6Gb/s	optional CacheVault (CV)     flash cache with super capacitor     optional CacheCade Pro 2.0     optional FastPath key	Ociemory CPU1 Semory	Memory CPU2		8 x 2.5"/16 x 2.5" (Bay 9-16 are available on 16 x 2.5" models)
	**RAID 300 is supporte	ed on 8 x 3.5	5" and 8 x 2	.5" models o	only	idii idii idii	ian ian	Н.	Disk Bay
Optical drive (optional)	8 x 3.5"/8 x 2.5"/1  12 x 3.5" :	16 x 2.5":	one slii none o	m optical ptical bay	bay, supports one slim optical y, external USB optical is needed	disks and op	tical* area	a	optical 1-8 9-16
Onboard network	Two Gigabit Ethe		s by Intel	i350,	dedicate/share management	* Slim optical bay is n on 12 x 3.5" models	ot availabl	9	
Discrete network (optional)	1Gbps: 350-T2/	/I350-T4			options on selected models: per Module for X520-DA2				6 - PCle x8 2 - PCle x8 3 - PCle x8 9 - PCle x8
Intelligent Diagnostics Module (optional)	Supports optional selected 8 x 3.5"/ IDM LED lights in IDM Premium LE	ndicate fai	iling com	ponent c		Up to six PCI-Ex riser card 1 for sl	press sl ot 1-3. r	iser ca	
Systems management (iKVM is optional)	<ul> <li>Onboard Aspectiful 2.0-compliant optional Thinks</li> </ul>	ed AST23 liant base Server Ma EDs sho Grid Mana	300 grapl board m inageme ws the st ager	hics/man anagement nt Modul tatus of p	agement processor, ent controller (BMC); e Premium for iKVM functions lower, ID, network, system	Slot 2: half-length Slot 3: half-length Slot 4: Low Profil Slot 5-6 are avail	n, full-he n, full-he e, PCle lable on n, full-he	ight, F ight, F 3.0 x8 <i>dual p</i> ight, F	PCIe 3.0 x8 2 ethernet (RJ-45), PCIe 2.0 x8 (x4) 1 RJ-45 (dedicate/share mgmt), PCIe 3.0 x16 (x8 elec) 1 VGA  2 ethernet (RJ-45), 1 RJ-45 (dedicate/share mgmt), 1 VGA  2 ethernet (RJ-45), 1 RJ-45 (dedicate/share mgmt), 2 CIE 3.0 x16 (x8 elec)
Cooling fans	5 fans, hot swap,					Clot of Hall Torigit	.,	.g.,, i	0.0 0.0 %

### ThinkServer RD440 (70AG) - January 2014

	Type- model <sup>1</sup>	Intel Xeon Processor	2nd CPU	Memory	Disk Bays	RAID controller	Storage	Slim optical		Intelligent Diagnostics	l	1			Preloaded OS	Base warranty (-year, on-site)
7	70AG0000US	E5-2440 6C/2.4GHz/15MB/1333MHz	2nd	8GBx6+16GBx6 1600MHz LVRDIMM	8X2.5" HS	RAID500	8x600GB 2.5" SAS(RAID50)	DVD±RW	X540T2 +X520DA2	IDM Premium	iKVM	Cable	1	TPM	2012 Standard	3

<sup>1.</sup> Model in italics is Global model 2. By default, the voltage of LV RDIMM is 1.5V and can be changed to 1.35V in BIOS setting

- For detailed platform specifications, please see <u>ThinkServer RD440 Platform Specifications</u> sheets
   For optional configurations of ThinkServer RD340, please see <u>ThinkServer RD440 Optional Configurations</u> sheets

	2U rack with rail kit     19" W x 28.9" D x 3.45" H (with rack handles)	Cable mgmt (opt) Optional cable management arm on selected models
Mechanical	482.4mm W x 734mm D x 87.6mm H (with rack handles)     26.5 kg (58.42 lb) when fully configured	Power supply  One or two 800 watts standard, two maximum, rear access, hot-swap, 80 PLUS Gold qualified, redundant with two power supplies
Chipset	Intel C606 Chipset, two LGA1356 sockets for processors	Security features   Power-on password/administrator password, (TPM is optional)   Trusted Platform Module (TCG 1.2-compliant) on selected models
Memory DIMMs	Twelve DIMM sockets, six DIMM sockets per processor	Environmental • Energy Star Server 2.0 qualified • RoHS-compliant
Memory protection	ECC, memory mirroring, memory sparing	The state of the s
	RAID adapter RAID support Cache Transfer rates Optional upgrades	8 x 3.5"
	RAID 300* (onboard) 0, 1, 10 6Gb/s optional upgrade key, add RAID 5 support	Riser card 2 2 Power supply
	RAID 500 (LSI 9240-8i)   0, 1, 10   6Gb/s   optional upgrade key, add RAID 5, 50 support	12 x 3.5"
RAID support	RAID 700 (LSI 9260-8i) 0, 1, 10, 5, 50, 6, 60 512MB 6Gb/s optional intelligent Battery Backul Unit (iBBU08)	
	RAID 710 (LSI 9270CV-8i) 0, 1, 10, 5, 50, 6, 60 1GB 6Gb/s • optional CacheVault (CV) flash cache with super capacitor optional CacheCade Pro 2.0 • optional FastPath key	CPU1   Res   CPU2   Res   CPU
	**RAID 300 is supported on 8 x 3.5" and 8 x 2.5" models only	:::: Disk Bay
Optical drive (optional)	8 x 3.5"/8 x 2.5"/16 x 2.5": one slim optical bay, supports one slim optical 12 x 3.5": one slim optical bay, external USB optical is needed	disks and optical* area optical optical
Onboard network	Two Gigabit Ethernet ports by Intel i350, one Gigabit Ethernet port by Intel 82574L, dedicate/share management	* Slim optical bay is not available on 12 x 3.5" models  **Fear*  5 - PCle x16   T - PCle x16
Discrete network (optional)	Supports the following Intel Server Adapter options on selected models: 1Gbps: 350-T2/l350-T4 10Gbps: X520-SR2/X520-DA2/X540-T2/Fiber Module for X520-DA2	6 - PCle x8 2 - PCle x8 2 - PCle x8 8 - PCle x8 9 - PCle x8
Intelligent Diagnostics Module (optional)	Supports optional Intelligent Diagnostics Module (IDM) or IDM Premium on selected 8 x 3.5"/8 x 2.5"/16 x 2.5" models, IDM LED lights indicate failing component category, IDM Premium LED lights indicate individual failing part	Expansion Slots:  Up to six PCI-Express slots via two riser cards, riser card 1 for slot 1-3, riser card 2 for slot 4-6: Slot 1: half-length, full-height, PCIe 3.0 x16 (x8 elec)  Front/rear Ports: Front 1 VGA (for 6 x 2.5"/8 x 2.5" models), 2 USB 2.0 Rear: 4 USB 2.0, 1 serial (9-pin),
Systems management (iKVM is optional)	Onboard Aspeed AST2300 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC); optional ThinkServer Management Module Premium for iKVM functions     Control Panel LEDs shows the status of power, ID, network, system     Lenovo SmartGrid Manager     ThinkServer EasyStartup/EasyManage/EasyUpdate	Slot 1: half-length, full-height, PCle 3.0 x8 Slot 2: half-length, full-height, PCle 3.0 x8 Slot 3: half-length, full-height, PCle 2.0 x8 (x4) Slot 4: Low Profile, PCle 3.0 x8 (x4 elec) Slot 5-6 are available on dual processors models: Slot 5: half-length, full-height, PCle 3.0 x16 (x8 elec) Slot 6: half-length, full-height, PCle 3.0 x8
Cooling fans	5 fans, hot swap, 4 + 1 redundant	

## ThinkServer RD440 (70B2) - January 2014

Type- model <sup>1</sup>	Intel Xeon Processor	2nd CPU	Memory	Disk Bays	RAID controller	Storage			Intelligent Diagnostics					Preloaded OS	Base warranty (-year, on-site)
70B20000US	Xeon E5-2450L v2 10C/1.7GHz/25MB/1600MHz	2nd	4GBx6+16GBx6 1600MHz LVRDIMM	16X2.5" HS	RAID700 +Battery	12x900GB 2.5" SAS(RAID10) +4x1TB 2.5" SATA(RAID1)	DVD±RW	X520DA2	IDM Premium	iKVM	Cable	1	TPM	2012 Standard	3

<sup>1.</sup> Model in italics is Global model 2. By default, the voltage of LV RDIMM is 1.5V and can be changed to 1.35V in BIOS setting

- For detailed platform specifications, please see <u>ThinkServer RD440 Platform Specifications</u> sheets
   For optional configurations of ThinkServer RD340, please see <u>ThinkServer RD440 Optional Configurations</u> sheets

	• 2U rack with rail kit	Cable mgmt (opt) Optional cable management arm on selected models
Mechanical	<ul> <li>19" W x 28.9" D x 3.45" H (with rack handles)</li> <li>482.4mm W x 734mm D x 87.6mm H (with rack handles)</li> <li>26.5 kg (58.42 lb) when fully configured</li> </ul>	Power supply  One or two 800 watts standard, two maximum, rear access, hot-swap, 80 PLUS Gold qualified, redundant with two power supplies
Chipset	Intel C606 Chipset, two LGA1356 sockets for processors	Security features   Power-on password/administrator password, (TPM is optional)   Trusted Platform Module (TCG 1.2-compliant) on selected models
Memory DIMMs	Twelve DIMM sockets, six DIMM sockets per processor	Environmental • Energy Star Server 2.0 qualified • RoHS-compliant
Memory protection	ECC, memory mirroring, memory sparing	The state of the s
	RAID adapter RAID support Cache Transfer rates Optional upgrades	8 x 3.5"
	RAID 300* (onboard) 0, 1, 10 6Gb/s optional upgrade key, add RAID 5 support	Riser card 2  Power supply  Po
	RAID 500 (LSI 9240-8i) 0, 1, 10 6Gb/s optional upgrade key, add RAID 5, 50 support	12 x 3.5"
RAID support	RAID 700 (LSI 9260-8i) 0, 1, 10, 5, 50, 6, 60 512MB 6Gb/s optional intelligent Battery Backul Unit (iBBU08)	
	RAID 710 (LSI 9270CV-8i) 0, 1, 10, 5, 50, 6, 60 1GB 6Gb/s 0-optional CacheVault (CV) flash cache with super capacitor optional CacheCade Pro 2.0 optional FastPath key	CPU1   Res   CPU2   Res   CPU
0 11 1 11	**RAID 300 is supported on 8 x 3.5" and 8 x 2.5" models only	Disk Bay Disk Bay
Optical drive (optional)	8 x 3.5"/8 x 2.5"/16 x 2.5": one slim optical bay, supports one slim optical 12 x 3.5": one optical bay, external USB optical is needed	disks and optical* area
Onboard network	Two Gigabit Ethernet ports by Intel i350, one Gigabit Ethernet port by Intel 82574L, dedicate/share management	* Slim optical bay is not available on 12 x 3.5" models  **Fear*  5 - PCle x16   T - PCle x16
Discrete network (optional)	Supports the following Intel Server Adapter options on selected models: 1Gbps: 350-T2/l350-T4 10Gbps: X520-SR2/X520-DA2/X540-T2/Fiber Module for X520-DA2	6-PCIe x8
Intelligent Diagnostics Module (optional)	Supports optional Intelligent Diagnostics Module (IDM) or IDM Premium on selected 8 x 3.5"/8 x 2.5"/16 x 2.5" models, IDM LED lights indicate failing component category, IDM Premium LED lights indicate individual failing part	Expansion Slots:  Up to six PCI-Express slots via two riser cards, riser card 1 for slot 1-3, riser card 2 for slot 4-6: Slot 1: half-length, full-height, PCIe 3.0 x16 (x8 elec)  Front/rear Ports: Front: 1 VGA (for 6 x 2.5"/8 x 2.5" models), 2 USB 2.0 Rear: 4 USB 2.0, 1 serial (9-pin),
Systems management (iKVM is optional)	Onboard Aspeed AST2300 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC); optional ThinkServer Management Module Premium for iKVM functions     Control Panel LEDs shows the status of power, ID, network, system     Lenovo SmartGrid Manager     ThinkServer EasyStartup/EasyManage/EasyUpdate	Slot 2: half-length, full-height, PCle 3.0 x8 Slot 3: half-length, full-height, PCle 2.0 x8 (x4) Slot 4: Low Profile, PCle 3.0 x8 (x4 elec) Slot 5: half-length, full-height, PCle 3.0 x16 (x8 elec) Slot 6: half-length, full-height, PCle 3.0 x8
Cooling fans	5 fans, hot swap, 4 + 1 redundant	

## ThinkServer RD440 Platform Systems Specifications - I of II

Components	Specifications					
Mechanical	<ul> <li>2U rack with rai</li> <li>19" W x 28.9" D</li> <li>482.4mm W x 7</li> </ul>	x 3.45" l				
	<ul> <li>28 kg (61.73 lb)</li> </ul>	when fu			Track Harrando)	
Chipset	Intel C606 Chips					
Processors	up to 8 cores (E5 up to 20MB (E5-2	-2400 se 2400 seri	ries)/10 ( es)/25ME	cores (E5 3 (E5-24)	processors from Intel <b>Xeon E5-24</b> ( i-2400 v2 series), one QPI links up 00 v2 series) cache, ler up to 1600MHz	<b>00</b> or <b>Xeon E5-2400 v2</b> families, p to 8.0GT/s,
Memory type	1600MHz. LV RD	IMM*. DI	DR3. 3-cl	hannel p	er processor, 240-pin changed to1.35V in BIOS setting	
Memory DIMMs	Twelve DIMM soc					
Memory capacity	Up to 192GB DD				)	
Memory protection	ECC, memory mi	rroring, n	nemory s	paring		
Disk bays configurations	Supports one of t • 8 x 3.5" disk ba • 12 x 3.5" disk b • 8 x 2.5" disk ba • 16 x 2.5" disk b	ys + 1 x s ays ys + 1 x s	slim optic	al bay al bay	:	
	RAID adapter	RAID support	Cache	Transfer rates	Optional upgrades	
	RAID 300** (onboard)	0, 1, 10		6Gb/s	optional upgrade key, add RAID 5 support	
	RAID 500 (LSI 9240-8i)	0, 1, 10		6Gb/s	optional upgrade key, add RAID 5, 50 support	
RAID support	RAID 700 (LSI 9260-8i)	5, 50, 6, 60	512MB	6Gb/s	optional intelligent Battery Backup Unit (iBBU08)	
	RAID 710 (LSI 9270CV-8i)	0, 1, 10, 5, 50, 6, 60	1GB	6Gb/s	optional CacheVault (CV) flash cache with super capacitor     optional CacheCade Pro 2.0     optional FastPath key	
	** RAID 300 is support	ed on 8 x 3.	5" and 8 x 2	2.5" models	only	
Optical drive (optional)	8 x 3.5"/8 x 2.5"/12 x 3.5" models	6 x 2.5"	models:	one slim none opt	optical bay, supports one optional ical bay, optional external USB op	l slim optical tical is needed
Onboard network		net port	by Intel 8	32574L, c	dedicate/share management	
Front ports					8.5", 8 x 2.5", and 16 x 2.5" models	s), two USB 2.0
Rear ports	Four USB 2.0, or one RJ-45 (dedic	e serial ( ate/share	9-pin), tv e mgmt),	vo ethern one anal	et (RJ-45), og VGA DB-15 connector	
Expansion Slots			[6 [7]	00000000		3
,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	Up to six PCI-Ext Slot 1: half-length Slot 2: half-length Slot 3: half-length Slot 4: Low Profil Slot 5: half-length Slot 5: half-length Slot 6: h	ı, full-heiç ı, full-heiç ı, full-heiç e, PCle 3 able on d ı, full-heiç	ght, PCle ght, PCle ght, PCle JO x8 (x4 <i>lual proce</i> ght, PCle	3.0 x16 3.0 x8 2.0 x8 (x elec) essors m 3.0 x16	(4) odels:	eard 2 for slot 4-6
Graphics		AST230	0 graphic	cs/manag	ement processor, one VGA DB-18	5 on front, one VGA DB-15 on rear;

### ThinkServer RD440 Platform Systems Specifications - II of II

Components	Specifications			
ntelligent Diagnostics Module (optional)	IDM basic LED lights IDM Premium LED lig	indicate failing component categor hts indicate individual failing part		
Systems management (iKVM is optional)	optional ThinkServe • Front control panel I • Lenovo SmartGrid I • ThinkServer EasySi	r Management Module Premium for LEDs shows the status of power, If Manager Partup/EasyManage/EasyUpdate	D, network, system	ard management controller (BMC);
Security features TPM is optional)	Power-on password/a	dministrator password/Trusted Pla	tform Module (TCG 1.2-compliant)	
Cooling fans	5 fans, hot-swap, 4 +	1 redundant		
Cable mgmt (opt)	Optional cable manag	gement arm on selected models		
Power supply	One or two 800 watts 80 PLUS Gold qualifie	standard, two maximum, rear acceed, redundant with two power supp	ess, hot-swap, blies	
Hot-swap parts	Disk drives, power su	pplies, and cooling fans		
	Environmental certifications	<ul> <li>Energy Star Server 2.0 qual</li> <li>RoHS-compliant</li> </ul>	lified	
	EMC	FCC Class A, CSA, CE		
	240VA	Supports		
	Temperature - operating	50 °F to 95 °F (10 °C to 35 °C)	)	
	Temperature - non operating (no package)	-10 °C to 60 °C		
	Temperature - non operating (with package)	-40 °C to 70 °C		
	Altitude - operating	Supported Altitude (unpressurize	zed): 0-10000ft (0-3048m)	
	Humidity - operating	8%~80%, non-condensing		
Safety, environment, and certifications	Humidity - non operating (no package)	8%~80%, non-condensing		
	Humidity - non operating (with package)	8%~90%, non-condensing		
			System	Configuration
		Category	Entry level	High-end
		CPU	1	2
		Memory	4GB x 1	4GB x 12
	Acoustic noise	Optical Drive	Slim optical	None
	(idle/working mode)	Drive Bays	8 x 3.5"	12 x 3.5"
	()	RAID	RAID500	RAID500
		HDD	2 x 500GB 3.5" SATA	12 x 2TB 3.5" SAS
		PSU	800Wx1	800Wx2
		Sound Pressure (operating)	44.98 dB(A)	44.2 dB(A)
		Sound Pressure (idle)	44.5 dB(A)	44.7 dB(A)

## ThinkServer RD440 Optional Configurations - Processor and Memory

Rack kit	Included in models									
Processor	The following proces	ssor op	otions are	available:						
					Processors	Specifi	cations*			Dort
	Processor Number		# of Threads	Clock Speed	Max Turbo Frequency		QPI Speed	Max TDP	Memory Speed	Part Number
	Intel Xeon E5-2400	) v2 S	eries							
	Xeon E5-2440 v2	8	16	1.9 GHz	2.4 GHz	20MB	7.2 GT/s	95W	DDR3-1600	0C19539
	Xeon E5-2450 v2	8	16	2.5 GHz	3.3 GHz	20MB	8 GT/s	95W	DDR3-1600	0C19538
	Xeon E5-2450L v2	10	20	1.7 GHz	2.1 GHz	25MB	7.2 GT/s	60W	DDR3-1600	0C19544
	Xeon E5-2470 v2	10	20	2.4 GHz	3.2 GHz	25MB	8 GT/s	95W	DDR3-1600	0C19537
	Xeon E5-2407 v2	4	4	2.4 GHz	2.4 GHz	10MB	6.4 GT/s	80W	DDR3-1333	0C19542
	Xeon E5-2420 v2	6	12	2.2 GHz	2.7 GHz	15MB	7.2 GT/s	80W	DDR3-1600	0C19541
	Xeon E5-2430 v2	6	12	2.5 GHz	3 GHz	15MB	7.2 GT/s	80W	DDR3-1600	0C19540
	Xeon E5-2430L v2	6	12	2.4 GHz	2.8 GHz	15MB	7.2 GT/s	60W	DDR3-1600	0C19545
	Xeon E5-2403 v2	4	4	1.8 GHz	1.8 GHz	10MB	6.4 GT/s	80W	DDR3-1333	0C19543
	Intel Xeon E5-2400	) Serie	es							
	Xeon E5-2450L	8	16	1.8 GHz	2.3 GHz	20MB	8 GT/s	70 W	DDR3-1600	0A89450
	Xeon E5-2450	8	16	2.1 GHz	2.9 GHz	20MB	8 GT/s	95 W	DDR3-1600	
	Xeon E5-2440	6	12	2.4 GHz	2.9 GHz	15MB	7.2 GT/s	95 W	DDR3-1333	
	Xeon E5-2430L	6	12	2 GHz	2.5 GHz	15MB	7.2 GT/s	60 W	DDR3-1333	0A89451
	Xeon E5-2407	4	4	2.2 GHz		10MB	6.4 GT/s	80 W	DDR3-1066	0A89448
	Xeon E5-2403	4	4	1.8 GHz		10MB	6.4 GT/s	80 W	DDR3-1066	0A89449
	Xeon E5-2430	6	12	2.2 GHz	2.7 GHz	15MB	7.2 GT/s	95 W	DDR3-1333	0A89446
	Xeon E5-2420	6	12	1.9 GHz	2.4 GHz	15MB	7.2 GT/s	95 W	DDR3-1333	0A89447
	Xeon E5-2470	8	16	2.3 GHz	3.1 GHz	20MB	8 GT/s	95 W	DDR3-1600	0A89443
	Notes: All processors specifica The information herein Intel may update this in	is prov	ided "as-is'	".	,	0			l.com/	
			Men	nory optior	าร			Part Numb		
Memory options	ThinkServer 4GB D	DR3L	-1600MH	z (1RX8) F	RDIMM			0C195	33	
, -p	ThinkServer 8GB D	DR3L	-1600MH	z (2RX8) F	RDIMM			0C195	34	
	ThinkServer 16GB	DDR3	L-1600MF	lz (2RX4)	RDIMM			0C195	35	

## ThinkServer RD440 Optional Configurations - Storage and RAID

	Liet even diele deine antique for C. Ell have	Dout Marsha				
	Hot-swap disk drive options for 3.5" bay	Part Number				
	3.5" SATA Hard Drive	0490470				
	ThinkServer 3.5" 500GB 7.2K Enterprise SATA 6Gbps Hot Swap Hard Drive	0A89473 0A89474				
	ThinkServer 3.5" 1TB 7.2K Enterprise SATA 6Gbps Hot Swap Hard Drive					
	ThinkServer 3.5" 2TB 7.2K Enterprise SATA 6Gbps Hot Swap Hard Drive	0A89475 0A89477				
	ThinkServer 3.5" 3TB 7.2K Enterprise SATA 6Gbps Hot Swap Hard Drive					
	ThinkServer 3.5" 4TB 7.2K Enterprise SATA 6Gbps Hot Swap Hard Drive	0C19520				
Disk drive options	3.5" SAS Hard Drive					
for 3.5" disk bay models (8 x 3.5"/12 x 3.5")	ThinkServer 3.5" 1TB 7.2K SAS 6Gbps Hot Swap Hard Drive	0C19530				
(8 X 3.5 / 12 X 3.5 °)	ThinkServer 3.5" 2TB 7.2K SAS 6Gbps Hot Swap Hard Drive	0C19531				
	ThinkServer 3.5" 3TB 7.2K SAS 6Gbps Hot Swap Hard Drive	0C19532				
	ThinkServer 3.5" 300GB 15K SAS 6Gbps Hot Swap Hard Drive	67Y2616				
	ThinkServer 3.5" 600GB 15K SAS 6Gbps Hot Swap Hard Drive	4XB0F28644				
	2.5" SSD for 3.5" disk bay					
	ThinkServer 2.5" 100GB MLC SATA Solid State Drive to 3.5" Kit	0C19571				
	ThinkServer 2.5" 200GB MLC SATA Solid State Drive to 3.5" Kit	0C19572				
	ThinkServer 2.5" 400GB MLC SATA Solid State Drive to 3.5" Kit	0C19573				
		Deat Nearly an				
	Hot-swap disk drive options for 2.5" bay	Part Number				
	2.5" SATA Hard Drive					
	ThinkServer 2.5" 500GB 7.2K Enterprise SATA 6Gbps Hot Swap Hard Drive	0C19495				
	ThinkServer 2.5" 1TB 7.2K Enterprise SATA 6Gbps Hot Swap Hard Drive	0C19496				
	2.5" SAS Hard Drive	T				
Disk drive options	ThinkServer 2.5" 300GB 10K SAS 6Gbps Hot Swap Hard Drive	67Y2619				
or 2.5" disk bay models 8 x 2.5"/16 x 2.5")	ThinkServer 2.5" 600GB 10K SAS 6Gbps Hot Swap Hard Drive	67Y2621				
5 X 2.5 / 10 X 2.5 )	ThinkServer 2.5" 900GB 10K SAS 6Gbps Hot Swap Hard Drive	0A89409				
	ThinkServer 2.5" 300GB 15K SAS 6Gbps Hot Swap Hard Drive	0C19494				
	2.5" SSD					
	ThinkServer 2.5" 100GB MLC SATA Solid State Drive	0A89420				
	ThinkServer 2.5" 200GB MLC SATA Solid State Drive	0A89418				
	ThinkServer 2.5" 400GB MLC SATA Solid State Drive	0A89419				
	RAID controller and RAID upgrade options	Part Number				
	ThinkServer RAID 300 Upgrade Key for Advanced RAID	0A89422				
	ThinkServer RAID 500 Adapter II	0A89464				
	ThinkServer RAID 500 Upgrade Key for Advanced RAID	0A89407				
	ThinkServer RAID 700 Adapter II	0A89463				
RAID options	ThinkServer RAID 700 Battery	67Y2647				
	ThinkServer RAID 710 Adapter	0C19489				
	ThinkServer RAID Super Capacitor Module	0C19490				
	ThinkServer RAID FastPath Software Key	0C19490 0C19491				
	ThinkServer RAID CacheCade Pro 2.0 Software Key	0C19491 0C19492				
	THIRROGIVE HAID Cachecade FTO 2.0 SURWATE Rey	0013432				

### ThinkServer RD440 Optional Configurations - Network, System Management, Power Supply

	Network and HBA options	Part Number
	ThinkServer 1Gbps Ethernet I350-T2 Server Adapter by Intel	0C19506
	ThinkServer 1Gbps Ethernet I350-T4 Server Adapter by Intel	0C19507
	Lenovo 10Gbps Ethernet X540-T2 Server Adapter by Intel	0C19497
Network and HBA	Lenovo 10Gbps Ethernet X520-DA2 Server Adapter by Intel	0C19486
options	Lenovo 10Gbps Ethernet Fiber Module by Intel	0C19488
	Lenovo 10Gbps Ethernet X520-SR2 Server Adapter by Intel	0C19487
	ThinkServer QLE8242-CU-CK Dual Port CNA by QLogic	0C19483
	ThinkServer LPe1250 Single Port 8Gb Fibre Channel HBA by Emulex	0C19476
	ThinkServer LPe12002 Dual Port 8Gb Fibre Channel HBA by Emulex	0C19478
	ThinkServer QLE2562 Dual Port 8Gb Fibre Channel HBA by Qlogic	0C19482
Coourity options	Trusted Platform Module options	Part Number
Security options	ThinkServer Trusted Platform Module	0A89428
	System Management option for iKVM	Part Number
Systems management	ThinkServer Management Module Premium	67Y2624
options	Cable Management option	Part Number
	ThinkServer Cable management Arm	0A89476
		·
Dawar aunnly antions	Power supply option	Part Number
Power supply options	ThinkServer 800W Gold Hot Swap Redundant Power Supply for Rack	4X20E54690

### ThinkServer RD440 Operating System and Virtualization Supportability Matrix

List of operating system and virtualization software supported on ThinkServer RD440

Operating System/Virtualization	Certified	Support ROK	Supports EasyStartup	Preloaded
Windows 0 00000 -0	0 = 1111	L		
Windows Server 2008 Standard Edition (x86)	6 Edition	I	•	
Windows Server 2008 Standard Edition (x86) Windows Server 2008 Enterprise Edition (x86)			•	
Windows Server 2008 Datacenter Edition (x86)			•	
Windows Server 2006 Datacenter Edition (x66)  Windows Server 2008 x6	4 Edition			
Windows Server 2008 Standard Edition (x64) (including Hyper-V)	• Lattion		•	
Windows Server 2008 Enterprise Edition (x64) (including Hyper-V)	•		•	
Windows Server 2008 Datacenter Edition (x64) (including Hyper-V)	•		•	
Windows Server 2008 Batacenter Edition (xo4) (including Typer V)	S4) with SE	21		
Windows Server 2008 Standard Edition R2 with SP1 (including Hyper-V)	• With Or	•	•	
Windows Server 2008 Enterprise Edition R2 with SP1 (including Hyper-V)	•	•	•	
Windows Server 2008 Datacenter Edition R2 with SP1 (including Hyper-V)	•	•	•	
Windows Small Business S		_		
Windows Small Business Server 2011 Essentials	•		•	
Windows Small Business Server 2011 Standard	•	•	•	
Windows Small Business Server Premium Add-On (including Hyper-V)	•	•	•	
Windows Server 1 Territatin Add-On (including Tryper-V)				
Windows Server 2012 Standard (including Hyper-V)	•	•	•	
Windows Server 2012 Standard (including Tryper-V) Windows Server 2012 Datacenter (including Hyper-V)	•	•	•	•
Windows Server 2012 Essentials	•	•	•	•
Windows Server 2012 Essentials Windows Server 2012 Hyper-V	•		•	
Windows Server 2012 Tryper-V Windows Server 201.	_			
Windows Server 2012 R2 Standard (including Hyper-V)	•	•	•	•
Windows Server 2012 R2 Datacenter (including Hyper-V)	•	•	•	•
Windows Server 2012 R2 Essentials	•		•	-
Windows Server 2012 R2 Hyper-V	•		•	
SUSE Linux Enterprise S	_			
SUSE Linux Enterprise Server 10 SP4	l vei xoo		•	I
SUSE Linux Enterprise Server 10 SP4	•		•	
SUSE Linux Enterprise Server 11 SP3	•		•	
SUSE Linux Enterprise Server 11 SFS				
	erver x64	I	-	T
SUSE Linux Enterprise Server 10 SP4	_		•	
SUSE Linux Enterprise Server 11 SP2	• • (DUEL) :		•	
RedHat Enterprise Linux Serve		X86		T
RHEL 5.9	•		•	
RHEL 5.10	•		•	
RHEL 6.4	•		•	
RHEL 6.5	1		•	
RedHat Enterprise Linux S	erver x64	I		T
RHEL 5.9	-		-	
RHEL 5.10	•		•	
RHEL 6.4	•		•	
RHEL 6.5	•		•	
VMware x64				
VMware ESXi 5.1 U1	•		•	•
VMware ESXi 5.5	•	•	•	•
Microsoft Hyper \	1	I		
Microsoft Hyper-V server 2008	•		•	
Microsoft Hyper-v server 2008 R2 SP1	•		•	
Citrix				
Citrix XenServer 6.1	•		•	
Citrix XenServer 6.0.2	•		•	

#### Note

For more information on ThinkServer operating system and virtualization software, please visit ThinkServer Software page: http://shop.lenovo.com/us/en/servers/thinkserver/server-software.html

For ThinkServer operating system and virtualization software options, please visit ThinkServer OS and virtualization Options document: http://www.lenovo.com/images/products/server/pdfs/datasheets/ThinkServer\_OS\_&\_Virtualization\_Options\_Datasheet.pdf

### **ThinkServer RD440 Services Upgrade Options**

Partial list of Lenovo Services for ThinkServer RD440 models with 3-year onsite base warranty

For more information see: http://www.lenovo.com/services\_warranty/us/en/lenovo-warranty.html

Upgrade Service Description Part Number										
	Part Number									
Warranty	E14/00E : = : = :									
3YR Onsite 24x7x4 Hour Response	5WS0F15458									
3YR Onsite 24x7x8 Hour Response	5WS0F15392									
3YR Onsite 9x5x4 Hour Response	5WS0F15355									
4YR Onsite 24x7x4 Hour Response	5WS0F15443									
4YR Onsite 24x7x8 Hour Response	5WS0F15395									
4YR Onsite 9x5x4 Hour Response	5WS0F15394									
4YR Onsite NBD	5WS0F15415									
5YR Onsite 24x7x4 Hour Response	5WS0F15377									
5YR Onsite 24x7x8 Hour Response	5WS0F15440									
5YR Onsite 9x5x4 Hour Response	5WS0F15430									
5YR Onsite NBD	5WS0F15419									
Keep Your Drive (KYD) Service										
3YR Keep Your Drive	5PS0F15436									
3YR Onsite 24x7x4 Hour Response + KYD	5PS0F15376									
3YR Onsite 24x7x8 Hour Response + KYD	5PS0F15349									
3YR Onsite 9x5x4 Hour Response + KYD	5PS0F15448									
4YR Onsite 24x7x4 Hour Response + KYD	5PS0F15389									
4YR Onsite 24x7x8 Hour Response + KYD	5PS0F15359									
4YR Onsite 9x5x4 Hour Response + KYD	5PS0F15456									
4YR Onsite NBD + KYD	5PS0F15459									
5YR Onsite 24x7x4 Hour Response + KYD	5PS0F15402									
5YR Onsite 24x7x8 Hour Response + KYD	5PS0F15381									
5YR Onsite 9x5x4 Hour Response + KYD	5PS0F15366									
5YR Onsite NBD + KYD	5PS0F15391									
Priority Technical Support										
3YR KYD + Priority Support	5PS0F15417									
3YR Onsite 24x7x4 Hour Response + KYD + Priority Support	5PS0F15352									
3YR Onsite 24x7x4 Hour Response + Priority Support	5WS0F15399									
3YR Onsite 24x7x8 Hour Response + KYD + Priority Support	5PS0F15444									
3YR Onsite 24x7x8 Hour Response + Priority Support	5WS0F15418									
3YR Onsite 9x5x4 Hour Response + KYD + Priority Support	5PS0F15398									
3YR Onsite 9x5x4 Hour Response + Priority Support	5WS0F15468									
3YR Priority Support	5WS0E76471									
4YR Onsite 24x7x4 Hour Response + KYD + Priority Support	5PS0F15462									
4YR Onsite 24x7x4 Hour Response + Priority Support	5WS0F15410									
4YR Onsite 24x7x8 Hour Response + KYD + Priority Support	5PS0F15433									
4YR Onsite 24x7x8 Hour Response + Priority Support	5WS0F15425									
4YR Onsite 9x5x4 Hour Response + KYD + Priority Support	5PS0F15400									
4YR Onsite 9x5x4 Hour Response + Priority Support	5WS0F15351									
4YR Onsite NBD + KYD + Priority Support	5PS0F15373									
4YR Onsite NBD + Priority Support	5WS0F15401									
4YR Priority Support	5WS0E77170									
5YR Onsite 24x7x4 Hour Response + KYD + Priority Support	5PS0F15350									
5YR Onsite 24x7x4 Hour Response + Priority Support	5WS0F15412									
5YR Onsite 24x7x8 Hour Response + KYD + Priority Support	5PS0F15471									
5YR Onsite 24x7x8 Hour Response + Priority Support	5WS0F15447									
5YR Onsite 9x5x4 Hour Response + KYD + Priority Support	5PS0F15437									
5YR Onsite 9x5x4 Hour Response + Priority Support	5WS0F15382									
5YR Onsite NBD + KYD + Priority Support	5PS0F15388									
5YR Onsite NBD + Priority Support	5WS0F15463									
5YR Priority Support	5WS0E77173									
3 TTT Honly Support	01100L11110									

r	Upgrade Service Description	Part Number
	Post Warranty	
8	1YR Onsite 24x7x4 Hour Response	5WS0F15435
2	1YR Onsite 24x7x4 Hour Response + Priority Support	5WS0F15370
5	1YR Onsite 24x7x8 Hour Response	5WS0F15427
3	1YR Onsite 24x7x8 Hour Response + Priority Support	5WS0F15361
3 5	1YR Onsite 9x5x4 Hour Response	5WS0F15416
4	1YR Onsite 9x5x4 Hour Response + Priority Support	5WS0F15348
5 7	1YR Onsite NBD	5WS0F15407
	1YR Onsite NBD + Priority Support	5WS0F15465
0	TopSeller Priority (TopSeller models only)	
9	3YR Onsite 24x7x4 Hour Response	5WS0D73789
9	3YR Onsite 9x5x4 Hour Response	5WS0D73787
	4YR Onsite 24x7x4 Hour Response	5WS0D73792
6	4YR Onsite 9x5x4 Hour Response	5WS0D73791
6	4YR Onsite NBD	5WS0F15470
9	3YR Onsite 24x7x4 Hour Response+Priority Support	5WS0F15414
8	3YR Onsite 9x5x4 Hour Response+Priority Support	5WS0F15423
9	3YR Priority Support	5WS0E76457
9	4YR Priority Support	5WS0E76482
6		

#### Note:

### 24x7x4: 4 Hour Onsite Response Time in 24x7 Service Window (requires Location Activation)

- 24 hours a day, 7 days a week, including nights and weekends
- Once the need for on-site presence is confirmed, an on-site technician is dispatched to arrive within 4 hours.
- Best coverage for business critical work loads

### 9x5x4: 4 Hour Onsite Response Time in 9x5 Service Window (requires Location Activation)

 Once the need for on-site presence is confirmed, an on-site technician is dispatched to arrive within 4 hours.

### 24x7x8: 8 Hour Onsite Response Time in 24x7 Service Window (requires Location Activation) • 24 hours a day, 7 days a week, including nights and weekends

 Once the need for on-site presence is confirmed, an on-site technician is dispatched to arrive within 8 hours.

#### Priority Technical Support

Lenovo's Priority Technical Support provides direct access to an advanced level technician supporting all of hardware, operating system and software needs related to server issues, available 24 hours a day, 7 days a week.

#### Keep Your Drive (KYD) Service

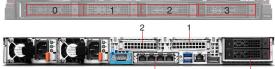
Retain drive (hard drive or SSD) and confidential data if the drive must be replaced. To confirm if 4hr services are available in a specified location, please use ThinkServer Service Availability Tool: http://www.lenovo.com/services\_warranty/us/en/locator.html Once purchased, to activate the location of your 4hr/8hr ThinkServer Service, please use ThinkServer Service Activation page: http://www.lenovo.com/activation

### ThinkServer RD550 with 3.5" Disk Bay - TopSeller - 70CV - I

Type- model	Processor	2nd CPU	Memory	AnyRAID	Disk Bays	Disk drives	M.2/SD module	Slots		Discrete ethernet	TPM	Chassis intrusion switch	System mgmt	Preloaded OS	Power	Ann Date (mm/yy)
70CV001CUX	1xE5-2609 v3 6C/1.9GHz/ 15MB/85W/1600MHz	4XG0F28803	1x8GB 2133MHz RDIMM	110i	4x3.5" HS	Open	No	1	DVD±RW	No	TPM	No	TSM	No	750Wx1 Platinum	09/14
70CV001DUX	1xE5-2620 v3 6C/2.4GHz/ 15MB/85W/1866MHz	4XG0F28802	1x8GB 2133MHz RDIMM	110i	4x3.5" HS	Open	No	1	DVD±RW	No	TPM	No	TSM	No	750Wx1 Platinum	09/14
70CV001EUX	1xE5-2640 v3 8C/2.6GHz/ 20MB/90W/1866MHz	4XG0F28800	1x8GB 2133MHz RDIMM	510i	4x3.5" HS	Open	No	1	DVD±RW	No	TPM	No	TSM	No	750Wx1 Platinum	09/14
70CV001FUX	1xE5-2650 v3 10C/2.3GHz/ 25MB/105W/2133MHz	4XG0F28799	1x8GB 2133MHz RDIMM	510i	4x3.5" HS	Open	No	1	DVD±RW	No	TPM	No	TSM	No	750Wx1 Platinum	09/14
70CV001GUX	1xE5-2670 v3 12C/2.3GHz/ 30MB/120W/2133MHz	4XG0F28797	1x8GB 2133MHz RDIMM	720i+1GB RAM	4x3.5" HS	Open	No	1	DVD±RW	No	TPM	No	TSM	No	750Wx1 Platinum	09/14

30MB/	120W/2133MHz		RDIMM	RAM	HS		
Components	Specification						
Form factor	1U rack						
Processor	Up to two 145W Ir 2.3GHz, 16 cores 10 cores up to 2.6 4 cores up to 3.5G Up to 2133MHz m	up to 2.3GHz GHz, 8 cores Hz. Two QPI	z, 14 cores up to s up to 3.2GHz, ( link up to 9.6 G	. 2.6GHz, 6 cores up T/s.	12 core	s up to 2.6G	
Chipset	Intel C612 Platforr						
Memory DIMMs	24 DIMM sockets processor). RDIMI	M and LRDIN	1M (cannot be in	itermixed)	, DDR4,	4-channel p, up to 2133۱	oer MHz
Memory capacity	384GB (RDIMM, 1				24)		
Memory protection	ECC, memory mir			sparing			
AnyRAID support	Supports AnyRAIC RAID 0, 1, 10 with RAID 0, 1, 10 with RAID 0, 1, 10, 5, 6 RAID 6 support. Of flash with super ca FastPath. Also suc	AnyRAID 110 AnyRAID 510 with AnyRA optional cacho apacitor. Flas	Di. 6Gb/s SATA, c Di, 6Gb/s SAS/SA ID 720i. 12Gb/s e for 720i: 1GB r h options include	ATA, option SAS/SAT/ ead-only needs CacheV	nal key f A. 720i r memory ault, Ca	or RAID 5/50 needs cache r. 1GB/2GB/4 cheCade Pro	for GB
Disk drive bays	Up to 4 front 3.5" I drive bays on 4 x 3	not-swap disk 3.5" models.	drive bays. Up Rear bays suppo	to 2 option ort SATA c	nal rear	2.5" hot-swa	` ⊪
Internal storage	Supports the follow hard drive up to 1.	wing hot-swa 8TB (SAS)/1	p drives: 3.5" ha TB (SATA), 2.5"	rd drive up	p to 6TE o 800GE	B (SATA/SAS B (SATA/SAS	), 2.5"   <sup>L</sup> 3).
M.2 SSD module	Up to 2 M.2 SSD of	drives via opt	ional M.2 modul	e, 80GB c	or 120GI	B each	
SD module	Up to 2 SDHC flas					B each	
Optical drive	Optional one Ultra	slim optical c	Irive, DVD-ROM	or DVD±	RW		
Tape drive bays	None						
Network interfaces	One dedicated ma Optional discrete r	network adap	ters via PCle slo	ots			
Security features	Power-on and adn 1.2-compliant). Op	tional chassi	s intrusion switc	h		`	G
Systems management	Supports ThinkSe UEFI. Onboard As IPMI 2.0-complian Control Panel LEE Supports ThinkSe Energy Manager, System Center Op	peed AST24 t baseboard os shows the rver manage System Mana perations Mar	00 graphics/mar management co status of power, ment software: L ager, Partner Pa nager, Power Pla	nagement Introller (B ID, netwo Diagnostic ck for VM anner	process MC). ork, syst s, Deplo ware vC	sor, em. byment Mana enter and Mi	icrosoft
Operating systems supported	Microsoft Windows Server 2011. Red VMware vSphere	Hat Enterpris (ESXi) 5.1 Pt	se Linux 6.5/6.6/ 5/5.5 U2/6.0				
Base warranty	3-year limited onsi Some parts are C						

Components	Specification										
Power supply	Up to two redundant hot-swap 550 W ac, 750 W ac, or 1100 W ac power supplies. 550 W and 1100 W are 80 PLUS Platinum qualified, 750 W is 80 PLUS Platinum or Titanium qualified. 750 W Titanium is 200V - 240V, others										
	are 110V - 240V.										
Graphics		Onboard Aspeed AST2400 with 16MB memory, one DisplayPort on front, ne DisplayPort on rear. Maximum resolution: 1920x1200@60Hz									
Front ports	One DisplayPort, two USB 2.0										
Rear ports	One DisplayPort, two USB 3.0, one RJ-45 (dedicate mgmt), one serial (9-pin)										
Cooling	8 (7+1, dual processors) or 6 (5+1, single processor), hot-swap										
Hot-swap parts	Disk drives, power supplies, and fans										
Noise emissions	Operating: < 6.5 Bels, Idle: < 6 Bels (Maximum configuration)										
Environmental specification	Temperature - operating Temperature - non operating (no package) Temperature - non operating (with package) Altitude - operating Humidity - operating Humidity - storage (with package)	41 °F to 113 °F (5 °C to 45 °C) -10 °C to 60 °C -40 °C to 60 °C (Unpressurized): 0-10000ft (0-3048m) 8%~90%, non-condensing 8%~90%, non-condensing									
	Note: 45 °C continuous operation configuration limitation: no 145W CPU/no 135W 4, 6, or 8 cores CPUno GPU card/redundant PSU/no FLFH card/no PCIe SSD adapter/no 1100W PSU.										
Weight	Minimum configuration: 13.5 kg (29	.76 lb), maximum: 21 kg (46.3 lb)									
Dimensions	Height: 43 mm (1.7 in), width: 482 r	mm (19 in), depth: 780 mm (30.7 i	n)								



AnyFabric slot 1 (Network adapter is optional) Optional 2 x 2.5" rear bays

Expansion slots
Up to two half-length PCle 3.0 x16 slots, depending on the riser cards and processors installed:
Slot 1 (riser card 1): PCle 3.0 x 16, low-profile, half length
Slot 2 (riser card 2): PCle 3.0 x 16, low-profile, half length, requires 2nd riser card and 2nd CPU

### Core Options for ThinkServer RD550 (partial)

4X70F28590	ThinkServer 16GB DDR4-2133MHz (2Rx4) RDIMM
4X70F28591	ThinkServer 32GB DDR4-2133MHz (4Rx4)RDIMM
4XB0F28712	ThinkServer 3.5" 1TB 7.2K Enterprise SATA 6Gbps Hot Swap Hard Drive
4XB0G45719	ThinkServer Gen 5 3.5" 4TB 7.2K Enterprise SAS 6Gbps Hot Swap Hard Drive
4XB0G45743	ThinkServer 3.5" 240GB Value Read-Optimized SATA 6Gbps Hot Swap SSD
4XB0F28714	ThinkServer Gen 5 3.5" 3TB 7.2K Enterprise SATA 6Gbps Hot Swap Hard Drive
4XB0G45715	ThinkServer Gen 5 3.5" 4TB 7.2K Enterprise SATA 6Gbps Hot Swap Hard Drive
4XF0G45878	Lenovo ThinkServer 1U x16 PCle Riser 2 Kit
4X20F28576	ThinkServer Gen 5 750W Titanium Hot Swap Power Supply
4XF0G45867	ThinkServer System Manager Premium (TSM Premium)
4X90F92980	ThinkServer DisplayPort to VGA Dongle

### ThinkServer RD550 with 3.5" Disk Bay - TopSeller - 70CV - II

Type-					Disk		M.2/SD			Discrete		Chassis intrusion	System	Preloaded		Ann Date
model	Processor	2nd CPU	Memory	AnyRAID	Bays	Disk drives	module	Slots	Optical	ethernet	TPM	switch	mgmt	os	Power	(mm/yy)
70CV001JUX	1xE5-2609 v3 6C/1.9GHz/ 15MB/85W/1600MHz	4XG0F28803	1x8GB 2133MHz RDIMM	510i	4x3.5" HS	Open	No	1	DVD±RW	No	TPM	No	TSM	No	750Wx1 Platinum	10/14
70CV001KUX	1xE5-2620 v3 6C/2.4GHz/ 15MB/85W/1866MHz	4XG0F28802	1x8GB 2133MHz RDIMM	510i	4x3.5" HS	Open	No	1	DVD±RW	No	TPM	No	TSM	No	750Wx1 Platinum	10/14
70CV001LUX	1xE5-2630 v3 8C/2.4GHz/ 20MB/85W/1866MHz	4XG0F28801	1x8GB 2133MHz RDIMM	510i	4x3.5" HS	Open	No	1	DVD±RW	No	TPM	No	TSM	No	750Wx1 Platinum	10/14
70CV001NUX	1xE5-2603 v3 6C/1.6GHz/ 15MB/85W/1600MHz	4XG0F28804	1x8GB 2133MHz RDIMM	110i	4x3.5" HS	Open	No	No	No	No	TPM	No	TSM	No	550Wx1 Platinum	10/14

Components	Specification	(
Form factor	1U rack	1
Processor	Up to two 145W Intel Xeon E5-2600 v3 family processors with 18 cores up to 2.3GHz, 16 cores up to 2.3GHz, 14 cores up to 2.6GHz, 12 cores up to 2.6GHz, 10 cores up to 2.6GHz, 8 cores up to 3.2GHz, 6 cores up to 3.4GHz,	F
1 10063301	4 cores up to 3.5GHz. Two QPI link up to 9.6 GT/s. Up to 2133MHz memory speed. Up to 45MB cache	C
Chipset	Intel C612 Platform Controller Hub (PCH)	F
Memory DIMMs	24 DIMM sockets (12 DIMMs per processor), 8-channel capable (4-channel per processor). RDIMM and LRDIMM (cannot be intermixed), DDR4, up to 2133MHz	F
Memory capacity	384GB (RDIMM, 16GB x 24)/768GB (LRDIMM, 32GB x 24)	H
Memory protection	ECC, memory mirroring, lockstep, and memory sparing	N
	Supports AnyRAID 110i, 510i, and 720i. RAID 0, 1, 10 with AnyRAID 110i. 6Gb/s SATA, optional key for RAID 5. RAID 0, 1, 10 with AnyRAID 510i, 6Gb/s SAS/SATA, optional key for RAID 5/50. RAID 0, 1, 10, 5, 6 with AnyRAID 720i. 12Gb/s SAS/SATA. 720i needs cache for RAID 6 support. Optional cache for 720i: 1GB read-only memory. 1GB/2GB/4GB flash with super capacitor. Flash options include CacheVault, CacheCade Pro, and FastPath. Also supports AnyRAID 110i on no front bay model, RAID 0 or 1	E
Disk drive bays	Up to 4 front 3.5" hot-swap disk drive bays. Up to 2 optional rear 2.5" hot-swap disk drive bays on 4 x 3.5" models. Rear bays support SATA only	V
Internal storage	Supports the following hot-swap drives: 3.5" hard drive up to 6TB (SATA/SAS), 2.5" hard drive up to 1.8TB (SAS)/1TB (SATA), 2.5" SSD up to 800GB (SATA/SAS).	
	Up to 2 M.2 SSD drives via optional M.2 module, 80GB or 120GB each	] (
SD module	Up to 2 SDHC flash cards via optional SD module, 8GB or 32GB each	1
Optical drive	Optional one Ultraslim optical drive, DVD-ROM or DVD±RW	
Tape drive bays	None	
Network interfaces	One dedicated management port. One AnyFabric slots for customized LOM. Optional discrete network adapters via PCIe slots	Ī
Security features	Power-on and administrator password. Optional Trusted Platform Module (TCG 1.2-compliant). Optional chassis intrusion switch	E
Systems management	Supports ThinkServer System Manager (TSM), optional TSM Premium. UEFI. Onboard Aspeed AST2400 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC). Control Panel LEDs shows the status of power, ID, network, system. Supports ThinkServer management software: Diagnostics, Deployment Manager, Energy Manager, System Manager, Partner Pack for VMware vCenter and Microsoft System Center Operations Manager, Power Planner	C 4
Operating systems supported	Microsoft Windows Server 2012 R2/2012/2008 R2. Windows Small Business Server 2011. Red Hat Enterprise Linux 6.5/6.6/7. SUSE Linux Enterprise Server 11. VMware vSphere (ESXi) 5.1 P5/5.5 U2/6.0	4
Base warranty	3-year limited onsite service with 9x5/NBD. Some parts are Customer Replaceable Units	] 4 ] 4

Components	Specification									
Power supply	supplies. 550 W and 1100 W are 80	Up to two redundant hot-swap 550 W ac, 750 W ac, or 1100 W ac power supplies. 550 W and 1100 W are 80 PLUS Platinum qualified, 750 W is 80 PLUS Platinum or Titanium qualified. 750 W Titanium is 200V - 240V, others are 110V - 240V.								
Graphics		Onboard Aspeed AST2400 with 16MB memory, one DisplayPort on front, one DisplayPort on rear. Maximum resolution: 1920x1200@60Hz								
Front ports	One DisplayPort, two USB 2.0									
Rear ports	One DisplayPort, two USB 3.0, one RJ-45 (dedicate mgmt), one serial (9-pin)									
Cooling	8 (7+1, dual processors) or 6 (5+1, single processor), hot-swap									
Hot-swap parts	Disk drives, power supplies, and fans									
Noise emissions	Operating: < 6.5 Bels, Idle: < 6 Bels	(Maximum configuration)								
Environmental specification	Temperature - operating Temperature - non operating (no package) Temperature - non operating (with package) Altitude - operating Humidity - operating Humidity - storage (with package)	41 °F to 113 °F (5 °C to 45 °C) -10 °C to 60 °C -40 °C to 60 °C (Unpressurized): 0-10000ft (0-3048m) 8%-90%, non-condensing 8%~90%, non-condensing								
	Note: 45 ° C continuous operation configuration limitation: no 145W CPU/no 135W 4, 6, or 8 cores CPUno GPU card/redundant PSU/no FLFH card/no PCle SSD adapter/no 1100W PSU.									
Weight	Minimum configuration: 13.5 kg (29	1.76 lb), maximum: 21 kg (46.3 lb)								
Dimensions	Height: 43 mm (1.7 in), width: 482 r	mm (19 in), depth: 780 mm (30.7 i	n)							



AnyFabric slot 1 (Network adapter is optional) Optional 2 x 2.5" rear bays

**Expansion slots**Up to two half-length PCle 3.0 x16 slots, depending on the riser cards and processors installed: Slot 1 (riser card 1): PCle 3.0 x 16, low-profile, half length Slot 2 (riser card 2): PCle 3.0 x 16, low-profile, half length, requires 2nd riser card and 2nd CPU

### Core Options for ThinkServer RD550 (partial)

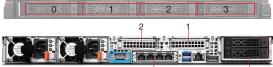
4X70F28590 T	hinkServer 16GB DDR4-2133MHz (2Rx4) RDIMM
4X70F28591 T	hinkServer 32GB DDR4-2133MHz (4Rx4)RDIMM
4XB0F28712 T	hinkServer 3.5" 1TB 7.2K Enterprise SATA 6Gbps Hot Swap Hard Drive
4XB0G45719 T	ThinkServer Gen 5 3.5" 4TB 7.2K Enterprise SAS 6Gbps Hot Swap Hard Drive
4XB0G45743 T	hinkServer 3.5" 240GB Value Read-Optimized SATA 6Gbps Hot Swap SSD
4XB0F28714 T	ThinkServer Gen 5 3.5" 3TB 7.2K Enterprise SATA 6Gbps Hot Swap Hard Drive
4XB0G45715 T	ThinkServer Gen 5 3.5" 4TB 7.2K Enterprise SATA 6Gbps Hot Swap Hard Drive
4XF0G45878 L	enovo ThinkServer 1U x16 PCIe Riser 2 Kit
4X20F28576 T	hinkServer Gen 5 750W Titanium Hot Swap Power Supply
4XF0G45867 T	hinkServer System Manager Premium (TSM Premium)
4X90F92980 T	hinkServer DisplayPort to VGA Dongle
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### ThinkServer RD550 with 3.5" Disk Bay - TopSeller - 70CV - III

Type-					Disk		M.2/SD			Discrete		Chassis intrusion	System	Preloaded		Ann Date
model	Processor	2nd CPU	Memory	AnyRAID	Bays	Disk drives		Slots	Optical	ethernet	TPM	switch	mgmt	OS	Power	(mm/yy)
70CV001SUX	1xE5-2630 v3 8C/2.4GHz/ 20MB/85W/1866MHz	4XG0F28801	2x8GB 2133MHz RDIMM	110i	4x3.5" HS	2x1TB 3.5" SATA6Gbs 7.2K	No	1	DVD±RW	GbEx4 RJ-45 AnyFabric	TPM	No	TSM Premium	No	750Wx2 Platinum	02/15

Components	Specification	Components	Specification
Form factor	1U rack	_	Up to two redun
	Up to two 145W Intel Xeon E5-2600 v3 family processors with 18 cores up to	Power supply	supplies. 550 W PLUS Platinum
Processor	2.3GHz, 16 cores up to 2.3GHz, 14 cores up to 2.6GHz, 12 cores up to 2.6GHz, 10 cores up to 2.6GHz, 8 cores up to 3.2GHz, 6 cores up to 3.4GHz,	,	are 110V - 240\
1 10063301	4 cores up to 3.5GHz. Two QPI link up to 9.6 GT/s.	0 1:	Onboard Aspec
	Up to 2133MHz memory speed. Up to 45MB cache	Graphics	one DisplayPort
Chipset	Intel C612 Platform Controller Hub (PCH)	Front ports	One DisplayPor
Memory DIMMs	24 DIMM sockets (12 DIMMs per processor), 8-channel capable (4-channel per	Rear ports	One DisplayPor
	processor). RDIMM and LRDIMM (cannot be intermixed), DDR4, up to 2133MHz	Cooling	8 (7+1, dual pro
Memory capacity	384GB (RDIMM, 16GB x 24)/768GB (LRDIMM, 32GB x 24)	Hot-swap parts	Disk drives, pov
Memory protection	ECC, memory mirroring, lockstep, and memory sparing	Noise emissions	Operating: < 6.5
	Supports AnyRAID 110i, 510i, and 720i.		Temperature - opera Temperature - non o
	RAID 0, 1, 10 with AnyRAID 110i. 6Gb/s SATA, optional key for RAID 5. RAID 0, 1, 10 with AnyRAID 510i, 6Gb/s SAS/SATA, optional key for RAID 5/50.		Temperature - non o
AnyRAID support	RAID 0, 1, 10, 5, 6 with AnyRAID 720i. 12Gb/s SAS/SATA. 720i needs cache for	Environmental	Altitude - operating
,	RAID 6 support. Optional cache for 720i: 1GB read-only memory. 1GB/2GB/4GB	specification	Humidity - operating Humidity - storage (v
	flash with super capacitor. Flash options include CacheVault, CacheCade Pro, and		Note: 45 ° C continuo
	FastPath. Also supports AnyRAID 110i on no front bay model, RAID 0 or 1		GPU card/redundant
Disk drive bays	Up to 4 front 3.5" hot-swap disk drive bays. Up to 2 optional rear 2.5" hot-swap disk drive bays on 4 x 3.5" models. Rear bays support SATA only	Weight	Minimum config
	Supports the following hot-swap drives: 3.5" hard drive up to 6TB (SATA/SAS), 2.5"	Dimensions	Height: 43 mm
Internal storage	hard drive up to 1.8TB (SAS)/1TB (SATA), 2.5" SSD up to 800GB (SATA/SAS).	• Initiative — — — — —	
M.2 SSD module	Up to 2 M.2 SSD drives via optional M.2 module, 80GB or 120GB each	0	
SD module	Up to 2 SDHC flash cards via optional SD module, 8GB or 32GB each		2
Optical drive	Optional one Ultraslim optical drive, DVD-ROM or DVD±RW		Z
Tape drive bays	None		
Network interfaces	One dedicated management port. One AnyFabric slots for customized LOM. Optional discrete network adapters via PCIe slots		
Security features	Power-on and administrator password. Optional Trusted Platform Module (TCG	AnyFabric slot 1 (N	letwork adapter is optic
Coounty Toutar or	1.2-compliant). Optional chassis intrusion switch	Expansion slots	<b>;</b>
	Supports ThinkServer System Manager (TSM), optional TSM Premium. UEFI. Onboard Aspeed AST2400 graphics/management processor,		gth PCIe 3.0 x16 s
	IPMI 2.0-compliant baseboard management controller (BMC).		1): PCle 3.0 x 16, l
Systems	Control Panel LEDs shows the status of power, ID, network, system.	`	2): PCle 3.0 x 16,
management	Supports ThinkServer management software: Diagnostics, Deployment Manager,	Core Options fo	r ThinkServer RD
	Energy Manager, System Manager, Partner Pack for VMware vCenter and Microsoft	4X70F28590 Th	ninkServer 16GB D
	System Center Operations Manager, Power Planner		ninkServer 32GB D
Operating systems	Microsoft Windows Server 2012 R2/2012/2008 R2. Windows Small Business Server 2011. Red Hat Enterprise Linux 6.5/6.6/7. SUSE Linux Enterprise Server 11.		ninkServer 3.5" 1T
supported	VMware vSphere (ESXi) 5.1 P5/5.5 U2/6.0		ninkServer Gen 5 3
D	3-year limited onsite service with 9x5/NBD.		ninkServer 3.5" 240 ninkServer Gen 5 3
Base warranty	Some parts are Customer Replaceable Units		ninkServer Gen 5 3
	· · · · · · · · · · · · · · · · · · ·		novo ThinkSorvor

	Components	Specification								
	Power supply	supplies. 550 W and 1100 W are 80	W ac, 750 W ac, or 1100 W ac power DPLUS Platinum qualified, 750 W is 80 d. 750 W Titanium is 200V - 240V, others							
	Graphics	Onboard Aspeed AST2400 with 16MB memory, one DisplayPort on front, one DisplayPort on rear. Maximum resolution: 1920x1200@60Hz								
1	Front ports	One DisplayPort, two USB 2.0								
1	Rear ports	One DisplayPort, two USB 3.0, one	RJ-45 (dedicate mgmt), one serial (9-pin)							
	Cooling	8 (7+1, dual processors) or 6 (5+1, single processor), hot-swap								
	Hot-swap parts	Disk drives, power supplies, and fans								
1	Noise emissions	Operating: < 6.5 Bels, Idle: < 6 Bels	(Maximum configuration)							
	Environmental specification	Temperature - operating Temperature - non operating (no package) Temperature - non operating (with package) Altitude - operating Humidity - operating Humidity - storage (with package)	41 ° F to 113 ° F (5 ° C to 45 ° C) -10 ° C to 60 ° C -40 ° C to 60 ° C (Unpressurized): 0-10000ft (0-3048m) 8%-90%, non-condensing 8%-90%, non-condensing							
		Note: 45 °C continuous operation configuration limitation: no 145W CPU/no 135W 4, 6, or 8 cores CPUno GPU card/redundant PSU/no FLFH card/no PCIe SSD adapter/no 1100W PSU.								
	Weight	Minimum configuration: 13.5 kg (29	.76 lb), maximum: 21 kg (46.3 lb)							
4	Dimensions	Height: 43 mm (1.7 in), width: 482 r	mm (19 in), depth: 780 mm (30.7 in)							
- 1										



AnyFabric slot 1 (Network adapter is optional) Optional 2 x 2.5" rear bays

### Expansion slots

Up to two half-length PCle 3.0 x16 slots, depending on the riser cards and processors installed: Slot 1 (riser card 1): PCle 3.0 x 16, low-profile, half length Slot 2 (riser card 2): PCle 3.0 x 16, low-profile, half length, requires 2nd riser card and 2nd CPU

### Core Options for ThinkServer RD550 (partial)

•	, ,
4X70F28590	ThinkServer 16GB DDR4-2133MHz (2Rx4) RDIMM
4X70F28591	ThinkServer 32GB DDR4-2133MHz (4Rx4)RDIMM
4XB0F28712	ThinkServer 3.5" 1TB 7.2K Enterprise SATA 6Gbps Hot Swap Hard Drive
4XB0G45719	ThinkServer Gen 5 3.5" 4TB 7.2K Enterprise SAS 6Gbps Hot Swap Hard Drive
4XB0G45743	ThinkServer 3.5" 240GB Value Read-Optimized SATA 6Gbps Hot Swap SSD
4XB0F28714	ThinkServer Gen 5 3.5" 3TB 7.2K Enterprise SATA 6Gbps Hot Swap Hard Drive
4XB0G45715	ThinkServer Gen 5 3.5" 4TB 7.2K Enterprise SATA 6Gbps Hot Swap Hard Drive
4XF0G45878	Lenovo ThinkServer 1U x16 PCle Riser 2 Kit
4X20F28576	ThinkServer Gen 5 750W Titanium Hot Swap Power Supply
	ThinkServer System Manager Premium (TSM Premium)
4X90F92980	ThinkServer DisplayPort to VGA Dongle

### ThinkServer RD550 with 2.5" Disk Bay - TopSeller - 70CX - I

Type- model	Processor	2nd CPU	Memory	AnyRAID	Disk Bays	Disk drives	M.2/SD module	Slots	Optical	Discrete ethernet	TPM	Chassis intrusion switch	System mgmt	Preloaded OS	Power	Ann Date (mm/yy)
70CX001XUX	1xE5-2620 v3 6C/2.4GHz/ 15MB/85W/1866MHz	4XG0F28802	1x8GB 2133MHz RDIMM	510i+Key	8x2.5" HS	Open	No	2	None	No	TPM	No	TSM	No	750Wx1 Platinum	09/14
70CX001YUX	1xE5-2640 v3 8C/2.6GHz/ 20MB/90W/1866MHz	4XG0F28800	1x8GB 2133MHz RDIMM	510i+Key	8x2.5" HS	Open	No	2	None	No	TPM	No	TSM	No	750Wx1 Platinum	09/14
	1xE5-2650 v3 10C/2.3GHz/ 25MB/105W/2133MHz	4XG0F28799	1x8GB 2133MHz RDIMM	720ix+1GB RAM	12x2.5" HS	Open	No	2	None	No	TPM	No	TSM	No	750Wx1 Platinum	09/14
70CX0021UX	1xE5-2670 v3 12C/2.3GHz/ 30MB/120W/2133MHz	4XG0F28797	1x8GB 2133MHz RDIMM	720ix+1GB RAM	12x2.5" HS	Open	No	2	None	No	TPM	No	TSM	No	750Wx1 Platinum	09/14
70CX0023UX	1xE5-2620 v3 6C/2.4GHz/ 15MB/85W/1866MHz	4XG0F28802	1x8GB 2133MHz RDIMM	720ix+1GB RAM	12x2.5" HS	Open	No	2	None	No	TPM	No	TSM	No	750Wx1 Platinum	10/14

15MB/	85W/1866MHz	4XG01 20002	RDIMM	RAM	HS	Орон	140
Components	Specification						
Form factor	1U rack						
Drooper	Up to two 145W II 2.3GHz, 16 cores	up to 2.3GHz	z, 14 cores up to	2.6GHz, 1	2 cores	up to 2.6GHz	z,
Processor	10 cores up to 2.6 4 cores up to 3.50 Up to 2133MHz m	GHz. Two QPI	link up to 9.6 G	T/s. '	10 3.4GF	12,	
Chipset	Intel C612 Platfori			20110			—— i
Memory DIMMs	24 DIMM sockets processor). RDIM						
Memory capacity	384GB (RDIMM,	16GB x 24)/70	68GB (LRDIMM)	, 32GB x 24	4)		1
Memory protection							
AnyRAID support	Supports AnyRAII RAID 0, 1, 10 with RAID 0, 1, 10, 5, 5 cache for RAID 6/ Optional cache for super capacitor. F	AnyRAID 510 50, 6, 60 with 60 support. 7 r 720i/720ix: lash options i	Di, 6Gb/s SAS/SA AnyRAID 720i/7 20ix must have a IGB read-only m nclude CacheVa	ATA, optiona 720ix. 12Gb a cache. nemory. 1Gl ault, Cache	al key for o/s SAS/ B/2GB/4 Cade Pr	r RAID 5/50. SATA. 720i n IGB flash wit ro, and FastP	eeds h ath.
Disk drive bays	Up to 8 (0-7) or 12 2 of 12 front 2.5" b kit is needed (Any	bay supports Bay kit needs	PCIe SSD, easy s 1 PCIe slots)	-swap, opti	onal Any	yBay Enabler	ment
Internal storage	Supports the follow (SATA), 2.5" SSD Aslo supports eas	up to 800GB	(SATA/SAS).			` '	١.
M.2 SSD module	Aslo supports eas Up to 2 M.2 SSD 80GB or 120GB e	drives via opt each	ional M.2 modul	e, 12 x 2.5"	' model v	with 720ix on	ily,
SD module	Up to 2 SDHC flas	sh cards via c	ptional SD mod	ule, 8GB or	32GB €	each	Į
Optical drive	None						
Tape drive bays	None						
Network interfaces	One dedicated ma Optional discrete	network adap	ters via PČle slo	ots			
Security features	Power-on and adr 1.2-compliant). Or	otional chassi	s intrusion switc	h		,	ι
Systems management	Supports ThinkSe UEFI. Onboard As IPMI 2.0-compliar Control Panel LEI Supports ThinkSe Energy Manager, System Center Op	speed AST24 It baseboard Ds shows the erver manage System Mana perations Mar	00 graphics/mar management co status of power, ment software: Dager, Partner Pa nager, Power Pla	nagement p ntroller (BN ID, network Diagnostics, ck for VMwa anner	orocesso MC). k, syster , Deploy are vCer	or, m. ment Manag nter and Micr	
Operating systems supported	Microsoft Window Server 2011. Red VMware vSphere	Hat Enterpris (ESXi) 5.1 Ps	se Linux 6.5/6.6/ 5/5.5 U2/6.0				
Base warranty	3-year limited ons Some parts are C						

Components	Specification							
Power supply		W ac or 1100 W ac power supplies. ied, 750 W is 80 PLUS Platinum or Titan 240V, 1100 W is 110V - 240V.	ium					
Graphics	Onboard Aspeed AST2400 with 16MB memory, one DisplayPort on rear.  Maximum resolution: 1920x1200@60Hz							
Front ports	None							
Rear ports	One DisplayPort, two USB 3.0, one	RJ-45 (dedicate mgmt), one serial (9-pi	n)					
Cooling	8 (7+1, dual processors) or 6 (5+1, single processor), hot-swap							
Hot-swap parts	Disk drives, power supplies, and fans							
Noise emissions	Operating: < 6.5 Bels, Idle: < 6 Bels (Maximum configuration)							
Environmental specification	Temperature - operating Temperature - non operating (no package) Temperature - non operating (with package) Altitude - operating Humidity - operating Humidity - storage (with package)	41 °F to 113 °F (5 °C to 45 °C) -10 °C to 60 °C -40 °C to 60 °C (Unpressurized): 0-10000ft (0-3048m) 8%~90%, non-condensing 8%~90%, non-condensing						
	Note: 45 ° C continuous operation configuration GPU card/redundant PSU/no FLFH card/no PC	limitation: no 145W CPU/no 135W 4, 6, or 8 cores CF Cle SSD adapter/no 1100W PSU.	PUno					
Weight	Minimum configuration: 13.5 kg (29	.76 lb), maximum: 21 kg (46.3 lb)						
Dimensions	Height: 43 mm (1.7 in), width: 482 r	nm (19 in), depth: 780 mm (30.7 in)						



AnyFabric slot 1 (Network adapter is optional) AnyFabric slot 2 (Network adapter is optional)

### **Expansion slots**

Up to three low-profile and half-length PCIe 3.0 x16 slots, depending on the riser cards and processors installed:

Slot 1 (riser card 1): PCle 3.0 x 16 (x8 wired), low-profile, half length
Slot 2 (riser card 1): PCle 3.0 x 16 (x8 wired), low-profile, half length
Slot 3 (riser card 2): PCle 3.0 x 16, low-profile, half length, requires 2nd riser card and 2nd CPU

### Core Options for ThinkServer RD550 (partial)

4X70F28590 ThinkServer 16GB DDR4-2133MHz (2Rx4) RDIMM 4X70F28591 ThinkServer 32GB DDR4-2133MHz (4Rx4)RDIMM 4XF0G45880 Lenovo ThinkServer 1U x8/x8 PCle Riser Kit 4X20F28576 ThinkServer Gen 5 750W Titanium Hot Swap Power Supply 4XF0G45867 ThinkServer System Manager Premium (TSM Premium) 4X90F92980 ThinkServer DisplayPort to VGA Dongle

### ThinkServer RD550 with 2.5" Disk Bay - TopSeller - 70CX - II

Type- model	Processor	2nd CPU	Memory	AnyRAID	Disk Bays	Disk drives	M.2/SD module	Slots	Optical	Discrete ethernet	TPM	Chassis intrusion switch	System mgmt	Preloaded OS	Power	Ann Date (mm/yy)
70CX0024UX	1xE5-2630 v3 8C/2.4GHz/ 20MB/85W/1866MHz	4XG0F28801	1x8GB 2133MHz RDIMM	720ix+1GB RAM	12x2.5" HS	Open	No	2	None	No	TPM	No	TSM	No	750Wx1 Platinum	10/14
70CX0025UX	1xE5-2630 v3 8C/2.4GHz/ 20MB/85W/1866MHz	4XG0F28801	1x8GB 2133MHz RDIMM	510i	8x2.5" HS	Open	No	2	None	No	TPM	No	TSM	No	750Wx1 Platinum	10/14
70CX0027UX	1xE5-2603 v3 6C/1.6GHz/ 15MB/85W/1600MHz	4XG0F28804	1x8GB 2133MHz RDIMM	110i	8x2.5" HS	Open	No	No	None	No	TPM	No	TSM	No	750Wx1 Platinum	10/14

Components	Specification	(
Form factor	1U rack	Т
	Up to two <b>145W Intel Xeon E5-2600 v3</b> family processors with 18 cores up to 2.3GHz, 16 cores up to 2.3GHz, 14 cores up to 2.6GHz, 12 cores up to 2.6GHz,	F
Processor	10 cores up to 2.6GHz, 8 cores up to 3.2GHz, 6 cores up to 3.4GHz, 4 cores up to 3.5GHz. Two QPI link up to 9.6 GT/s.	
	Up to 2133MHz memory speed. Up to 45MB cache	F
Chipset	Intel C612 Platform Controller Hub (PCH)	F
Memory DIMMs	24 DIMM sockets (12 DIMMs per processor), 8-channel capable (4-channel per processor). RDIMM and LRDIMM (cannot be intermixed), DDR4, up to 2133MHz	I
Memory capacity	384GB (RDIMM, 16GB x 24)/768GB (LRDIMM, 32GB x 24)	Ī
Memory protection	ECC, memory mirroring, lockstep, and memory sparing	1
AnyRAID support	Supports AnyRAID 110i, 510i, and 720i on 8 x 2.5" model, 720ix on 12 x 2.5" model. RAID 0, 1, 10 with AnyRAID 510i, 6Gb/s SAS/SATA, optional key for RAID 5/50. RAID 0, 1, 10, 5, 50, 6, 60 with AnyRAID 720i/720ix. 12Gb/s SAS/SATA. 720i needs cache for RAID 6/60 support. 720ix must have a cache. Optional cache for 720i/720ix: 1GB read-only memory. 1GB/2GB/4GB flash with super capacitor. Flash options include Cache/Vault. CacheCade Pro, and FastPath.	E
Disk drive bays	Up to 8 (0-7) or 12 (0-11) front 2.5" hot-swap disk drive bays. On 12 x 2.5" models, 2 of 12 front 2.5" bay supports PCIe SSD, easy-swap, optional AnyBay Enablement kit is needed (AnyBay kit needs 1 PCIe slots)	\ [
Internal storage	Supports the following hot-swap drives: 2.5" hard drive up to 1.8TB (SAS)/1TB (SATA), 2.5" SSD up to 800GB (SATA/SAS). Aslo supports easy-swap 2.5" PCIe SSD up to 1.6TB each	
M.2 SSD module	Up to 2 M.2 SSD drives via optional M.2 module, 12 x 2.5" model with 720ix only, 80GB or 120GB each	1
SD module	Up to 2 SDHC flash cards via optional SD module, 8GB or 32GB each	Į
Optical drive	None	
Tape drive bays	None	- 4
Network interfaces	One dedicated management port. Two AnyFabric slots for customized LOM. Optional discrete network adapters via PCIe slots	].
Security features	Power-on and administrator password. Optional Trusted Platform Module (TCG 1.2-compliant). Optional chassis intrusion switch	E
Systems management	Supports ThinkServer System Manager (TSM), optional TSM Premium. UEFI. Onboard Aspeed AST2400 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC). Control Panel LEDs shows the status of power, ID, network, system. Supports ThinkServer management software: Diagnostics, Deployment Manager, Energy Manager, System Manager, Partner Pack for VMware vCenter and Microsofi System Center Operations Manager, Power Planner	_ 4
Operating systems supported	Microsoft Windows Server 2012 R2/2012/2008 R2. Windows Small Business Server 2011. Red Hat Enterprise Linux 6.5/6.6/7. SUSE Linux Enterprise Server 11 VMware vSphere (ESXi) 5.1 P5/5.5 U2/6.0	4
Base warranty	3-year limited onsite service with 9x5/NBD. Some parts are Customer Replaceable Units	4 F

Components	Specification								
Power supply	Up to two redundant hot-swap 750 1100 W is 80 PLUS Platinum qualitied. 750 W Titanium is 200V -	W ac or 1100 W ac power supplies. fied, 750 W is 80 PLUS Platinum or Titani 240V, 1100 W is 110V - 240V.	ium						
Graphics	Onboard Aspeed AST2400 with 16MB memory, one DisplayPort on rear. Maximum resolution: 1920x1200@60Hz								
Front ports	None								
Rear ports	One DisplayPort, two USB 3.0, one	e RJ-45 (dedicate mgmt), one serial (9-pir	n)						
Cooling	8 (7+1, dual processors) or 6 (5+1, single processor), hot-swap								
Hot-swap parts	Disk drives, power supplies, and fans								
Noise emissions	Operating: < 6.5 Bels, Idle: < 6 Bels (Maximum configuration)								
Environmental specification	Temperature - operating Temperature - non operating (no package) Temperature - non operating (with package) Altitude - operating Humidity - operating Humidity - storage (with package)	41 °F to 113 °F (5 °C to 45 °C) -10 °C to 60 °C -40 °C to 60 °C (Unpressurized): 0-10000ft (0-3048m) 8%~90%, non-condensing 8%~90%, non-condensing							
	Note: 45 °C continuous operation configuration limitation: no 145W CPU/no 135W 4, 6, or 8 cores CPUno GPU card/redundant PSU/no FLFH card/no PCIe SSD adapter/no 1100W PSU.								
Weight	Minimum configuration: 13.5 kg (29	0.76 lb), maximum: 21 kg (46.3 lb)							
Dimensions	Height: 43 mm (1.7 in), width: 482	mm (19 in), depth: 780 mm (30.7 in)							



AnyFabric slot 1 (Network adapter is optional) AnyFabric slot 2 (Network adapter is optional)

### **Expansion slots**

Up to three low-profile and half-length PCIe 3.0 x16 slots, depending on the riser cards and processors installed:

Slot 1 (riser card 1): PCle 3.0 x 16 (x8 wired), low-profile, half length Slot 2 (riser card 1): PCle 3.0 x 16 (x8 wired), low-profile, half length

Slot 3 (riser card 2): PCle 3.0 x 16, low-profile, half length, requires 2nd riser card and 2nd CPU

### Core Options for ThinkServer RD550 (partial)

4X70F28590 ThinkServer 16GB DDR4-2133MHz (2Rx4) RDIMM 4X70F28591 ThinkServer 32GB DDR4-2133MHz (4Rx4)RDIMM 4XF0G45880 Lenovo ThinkServer 1U x8/x8 PCle Riser Kit 4X20F28576 ThinkServer Gen 5 750W Titanium Hot Swap Power Supply 4XF0G45867 ThinkServer System Manager Premium (TSM Premium) 4X90F92980 ThinkServer DisplayPort to VGA Dongle

## ThinkServer RD550 - Relationship

Type- model	Processor	2nd CPU	Memory	AnyRAID	Disk Bays	Disk drives	M.2/SD module	Slots		Discrete ethernet	TPM	Chassis intrusion switch	System mgmt	Preloaded OS	Power	Ann Date (mm/yy)
	1xE5-2620 v3 6C/2.4GHz/ 15MB/85W/1866MHz		RDIMM		110	Open	No	2	None	No	TPM	No	TSM	No	750Wx1 Platinum	09/14
1/()(,X()() Y()X	1xE5-2640 v3 8C/2.6GHz/ 20MB/90W/1866MHz	4XG0F28800	1x8GB 2133MHz RDIMM	510i+Key	8x2.5" HS	Open	No	2	None	No	TPM	No	TSM	No	750Wx1 Platinum	09/14

### **ThinkServer RD550 Options**

### Partial list of accessories supported on ThinkServer RD550

	Processors
4XG0F28790	Lenovo ThinkServer RD550 Intel Xeon E5-2699 v3 (18C, 145W, 2.3GHz) Processor Option Kit
4XG0F28701	Lenovo ThinkServer RD550 Intel Xeon E5-2698 v3 (16C, 135W, 2.3GHz) Processor Option Kit
	Lenovo ThinkServer RD550 Intel Xeon E5-2697 v3 (14C, 145W, 2.6GHz) Processor Option Kit
	Lenovo ThinkServer RD550 Intel Xeon E5-2695 v3 (14C, 120W, 2.3GHz) Processor Option Kit
4XG0F28794	Lenovo ThinkServer RD550 Intel Xeon E5-2690 v3 (12C, 135W, 2.6GHz) Processor Option Kit
4XG0F28795	Lenovo ThinkServer RD550 Intel Xeon E5-2683 v3 (14C, 120W, 2.0GHz) Processor Option Kit
	Lenovo ThinkServer RD550 Intel Xeon E5-2680 v3 (12C, 120W, 2.5GHz) Processor Option Kit
	Lenovo ThinkServer RD550 Intel Xeon E5-2670 v3 (12C, 120W, 2.3GHz) Processor Option Kit
4XG0F28798	Lenovo ThinkServer RD550 Intel Xeon E5-2660 v3 (10C, 105W, 2.6GHz) Processor Option Kit
	Lenovo ThinkServer RD550 Intel Xeon E5-2650 v3 (10C, 105W, 2.3GHz) Processor Option Kit
4XG0F28800	Lenovo ThinkServer RD550 Intel Xeon E5-2640 v3 (8C, 90W, 2.6GHz) Processor Option Kit
4XG0F28801	Lenovo ThinkServer RD550 Intel Xeon E5-2630 v3 (8C, 85W, 2.4GHz) Processor Option Kit
4XG0F28802	Lenovo ThinkServer RD550 Intel Xeon E5-2620 v3 (6C, 85W, 2.4GHz) Processor Option Kit
4XC0E38803	Lenovo ThinkServer RD550 Intel Xeon E5-2609 v3 (6C, 85W, 1.9GHz) Processor Option Kit
4XC0E28804	Lenovo ThinkServer RD550 Intel Xeon E5-2603 v3 (6C, 85W, 1.5GHz) Processor Option Kit
47/00/20004	Lenovo ThinkServer ADS50 Intel Aeon E3-2003 v3 (00, 05W, 1.00 Itz) Processor Option Kit
4XGUF28805	Lenovo ThinkServer RD550 Intel Xeon E5-2650L v3 (12C, 65W, 1.8GHz) Processor Option Kit
	Lenovo ThinkServer RD550 Intel Xeon E5-2630L v3 (8C, 55W, 1.8GHz) Processor Option Kit
4XG0F28829	Lenovo ThinkServer RD550 Intel Xeon E5-2667 v3 (8C, 135W, 3.2GHz) Processor Option Kit
4XG0F28830	Lenovo ThinkServer RD550 Intel Xeon E5-2643 v3 (6C, 135W, 3.4GHz) Processor Option Kit
4XG0F28831	Lenovo ThinkServer RD550 Intel Xeon E5-2637 v3 (4C, 135W, 3.5GHz) Processor Option Kit
4XG0E28833	Lenovo ThinkServer RD550 Intel Xeon E5-2623 v3 (4C, 105W, 3.0GHz) Processor Option Kit
4AGUF28833	Lenovo ThinkServer RD550 Intel Xeon E5-2685 v3 (12C, 120W, 2.6GHz) Processor Option Kit
4)/7050500	Memory Third-One and ACR DDDA 04 000M In (4 Days) DDAMA
	ThinkServer 4GB DDR4-2133MHz (1Rx8) RDIMM
	ThinkServer 8GB DDR4-2133MHz (1Rx4) RDIMM
4X70F28590	ThinkServer 16GB DDR4-2133MHz (2Rx4) RDIMM
4X70F28591	ThinkServer 32GB DDR4-2133MHz (4Rx4) LRDIMM
	Drives - 3.5"
3 5" Hot Swan	SATA Hard Drives
4XD0F20712	ThinkServer Gen 5 3.5" 1TB 7.2K Enterprise SATA 6Gbps Hot Swap Hard Drive
	ThinkServer Gen 5 3.5" 2TB 7.2K Enterprise SATA 6Gbps Hot Swap Hard Drive
4XB0F28714	ThinkServer Gen 5 3.5" 3TB 7.2K Enterprise SATA 6Gbps Hot Swap Hard Drive
4XB0G45715	ThinkServer Gen 5 3.5" 4TB 7.2K Enterprise SATA 6Gbps Hot Swap Hard Drive
	7.2K SAS Hard Drives
	ThinkServer Gen 5 3.5" 1TB 7.2K Enterprise SAS 6Gbps Hot Swap Hard Drive
	ThinkServer Gen 5 3.5" 2TB 7.2K Enterprise SAS 6Gbps Hot Swap Hard Drive
4XB0G45/18	ThinkServer Gen 5 3.5" 3TB 7.2K Enterprise SAS 6Gbps Hot Swap Hard Drive
4XB0G45719	ThinkServer Gen 5 3.5" 4TB 7.2K Enterprise SAS 6Gbps Hot Swap Hard Drive
3.5" Hot Swap	SATA Solid State Drives
4XB0G45742	ThinkServer Gen 5 3.5" 120GB Value Read-Optimized SATA 6Gbps Hot Swap Solid State Drive
4XB0G45743	ThinkServer Gen 5 3.5" 240GB Value Read-Optimized SATA 6Gbps Hot Swap Solid State Drive
4XD0G45744	ThinkServer Gen 5 3.5" 300GB Value Read-Optimized SATA 6Gbps Hot Swap Solid State Drive
4XB0G45/45	ThinkServer Gen 5 3.5" 480GB Value Read-Optimized SATA 6Gbps Hot Swap Solid State Drive
4XB0G45746	ThinkServer Gen 5 3.5" 600GB Value Read-Optimized SATA 6Gbps Hot Swap Solid State Drive
4XB0G45747	ThinkServer Gen 5 3.5" 800GB Value Read-Optimized SATA 6Gbps Hot Swap Solid State Drive
	SAS Solid State Drives
	ThinkServer Gen 5 3.5" 200GB Enterprise Performance SAS 12Gbps Hot Swap Solid State Drive
4VD0C45704	ThinkServer Gen 5 3.5" 400GB Enterprise Performance SAS 12Gbps Hot Swap Solid State Drive
4ABUG45/35	ThinkServer Gen 5 3.5" 800GB Enterprise Performance SAS 12Gbps Hot Swap Solid State Drive
	Drives - 2.5"
2.5" Hot Swap	SATA Hard Drives
4XB0G45720	ThinkServer Gen 5 2.5" 500GB 7.2K Enterprise SATA 6Gbps Hot Swap Hard Drive
4XB0G45721	ThinkServer Gen 5 2.5" 1TB 7.2K Enterprise SATA 6Gbps Hot Swap Hard Drive
	10K SAS Hard Drives
	ThinkServer Gen 5 2.5" 300GB 10K Enterprise SAS 6Gbps Hot Swap Hard Drive
	ThinkServer Gen 5 2.5" 600GB 10K Enterprise SAS 6Gbps Hot Swap Hard Drive
	ThinkServer Gen 5 2.5" 900GB 10K Enterprise SAS 6Gbps Hot Swap Hard Drive
	ThinkServer Gen 5 2.5" 1.2TB 10K Enterprise SAS 6Gbps Hot Swap Hard Drive
2.5" Hot Swan	15K SAS Hard Drives
	ThinkServer Gen 5 2.5" 146GB 15K Enterprise SAS 6Gbps Hot Swap Hard Drive
	ThinkServer Gen 5 2.5" 300GB 15K Enterprise SAS 6Gbps Hot Swap Hard Drive
	ThinkServer Gen 5 2.5" 450GB 15K Enterprise SAS 6Gbps Hot Swap Hard Drive
	ThinkServer Gen 5 2.5" 600GB 15K Enterprise SAS 6Gbps Hot Swap Hard Drive
	SATA Solid State Drives
	ThinkServer Gen 5 2.5" 120GB Value Read-Optimized SATA 6Gbps Hot Swap Solid State Drive
	ThinkServer Gen 5 2.5" 240GB Value Read-Optimized SATA 6Gbps Hot Swap Solid State Drive
/LX BUIL: 45707 :	
4XB0G45738	ThinkServer Gen 5 2.5" 300GB Value Read-Optimized SATA 6Gbps Hot Swap Solid State Drive
4XB0G45738 4XB0G45739	ThinkServer Gen 5 2.5" 480GB Value Read-Optimized SATA 6Gbps Hot Swap Solid State Drive
4XB0G45738 4XB0G45739 4XB0G45740	ThinkServer Gen 5 2.5" 480GB Value Read-Optimized SATA 6Gbps Hot Swap Solid State Drive ThinkServer Gen 5 2.5" 600GB Value Read-Optimized SATA 6Gbps Hot Swap Solid State Drive ThinkServer Gen 5 2.5" 600GB Value Read-Optimized SATA 6Gbps Hot Swap Solid State Drive ThinkServer Gen 5 2.5" 800GB Value Read-Optimized SATA 6Gbps Hot Swap Solid State Drive

4XB0F28661 ThinkServer 1.6TB ioMemory SX300 Performance PCIe 2.0 Solid State Drive by Fu 4XB0F28662 ThinkServer 3.2TB ioMemory SX300 Performance PCIe 2.0 Solid State Drive by Fu AnyRAID  4XB0F28690 ThinkServer RAID 110i RAID 5 Upgrade  4XB0F28691 ThinkServer RAID 510i AnyRAID Adapter	usionIO usionIO
4XB0F28662   ThinkServer 3.2TB ioMemory SX300 Performance PCIe 2.0 Solid State Drive by Fundamental State Drive St	JSionIO
AnyRAID  4XB0F28690   ThinkServer RAID 110i RAID 5 Upgrade  4XB0F28691   ThinkServer RAID 510i AnyRAID Adapter	
4XB0F28691 ThinkServer RAID 510i AnyRAID Adapter	
4XB0F28691 ThinkServer RAID 510i AnyRAID Adapter	
4XB0F28692 ThinkServer RAID 510i RAID 5 Upgrade	
4XB0F28693 ThinkServer RAID 720i AnyRAID Adapter	
4XB0F28694 ThinkServer RAID 720ix AnyRAID Adapter with Expander	
4XB0F28695 ThinkServer RAID 720i 1GB Modular DRAM Upgrade	
4XB0F28696 ThinkServer RAID 720i 1GB Modular Flash and Supercapacitor Upgrade	
4XB0F28697 ThinkServer RAID 720i 1GB Modular Flash and Supercapacitor Upgrade	
4XB0F28698 ThinkServer RAID 720i 4GB Modular Flash and Supercapacitor Upgrade	
Connectivity & Host Bus Adapters	
PCIe Ethernet Adapters - 1Gbps	
4XC0F28730 ThinkServer I350-T2 PCIe 1Gb 2 Port Base-T Ethernet Adapter by Intel	
4XC0F28731 ThinkServer I350-T4 PCIe 1Gb 4 Port Base-T Ethernet Adapter by Intel	
PCle Converged Network Adapters - 10Gpbs	
4XC0F28732 ThinkServer X540-T2 PCIe 10Gb 2 Port Base-T Ethernet Adapter by Intel	
4XC0F28733 ThinkServer X520-SR2 PCIe 10Gb 2 Port SFP+ Ethernet Adapter by Intel	
4XC0F28734 ThinkServer X520-DA2 PCIe 10Gb 2 Port SFP+ Ethernet Adapter by Intel	
4XC0F28735 ThinkServer 10Gb SR Optical Module by Intel	
4XC0F28736 ThinkServer OCe14102-UX-L PCIe 10Gb 2 Port SFP+ Converged Network Adapted	r by Emulex
4XC0F28737 ThinkServer 10Gb SR Optical Module by Emulex	
PCIe Converged Network Adapters - 40Gpbs	
4XC0F28738 ThinkServer OCe14401-UX-L PCIe 40Gb 1 Port QSFP+ Converged Network Adapt	ter by Emulex
4XC0F28739 ThinkServer 40Gb SR Optical Module by Emulex	
PCIe Fibre Channel Adapters	
4XB0F28704 ThinkServer LPe16002B-M8-L PCIe 8Gb 2 Port Fibre Channel Adapter by Emulex	
4XB0F28705 ThinkServer LPe16002B-M6-L PCIe 16Gb 2 Port Fibre Channel Adapter by Emulex	,
4XC0F28745 ThinkServer QLE2672 PCIe 16Gb 2 Port Fibre Channel Adapter by Qlogic	
SAS Controllers & Upgrades	
4XB0F28699 ThinkServer 9286CV-8e PCIe 6Gb 8 Port External SAS RAID Adapter by LSI	
4XB0F28700 ThinkServer CacheVault Data Protection Upgrade	
4XB0F28701 ThinkServer RAID FastPath Key	
4XB0F28702   ThinkServer RAID CacheCade Pro 2.0 Key	
Backup Options	
4XF0G45866 ThinkServer LTO-6 Linear Tape Drive Kit by Tandberg	
4XB0F28689   ThinkServer 2.5TB SAS 6Gbps LTO-6 Tape	
Redundant Power Supply	
4X20F28579 Lenovo ThinkServer Gen 5 550W Platinum Hot Swap Power Supply	
4X20F28575 Lenovo ThinkServer Gen 5 750W Platinum Hot Swap Power Supply	
4X20F28576 Lenovo ThinkServer Gen 5 750W Titanium Hot Swap Power Supply	
4X20F28577 Lenovo ThinkServer Gen 5 1100W Platinum Hot Swap Power Supply	
System Options	
4XF0G45871 Lenovo ThinkServer Gen 5 1U 4-Post Slide Rail Kit	
4XF0G45874 Lenovo ThinkServer Gen 5 1U Cable Management Arm	
4XF0G45878 Lenovo ThinkServer 1U x16 PCle Riser 2 Kit	
4XF0G45879 Lenovo ThinkServer 1U x16 PCle Riser 1 Kit	
4XF0G45880 Lenovo ThinkServer 1U x8/x8 PCIe Riser Kit	
4XF0G45885 Lenovo ThinkServer Gen 5 1U 3.5" 4-Drive Backplane Kit	
4XF0G45873 Lenovo ThinkServer Gen 5 4-Post Static Rail Kit	
4XF0G45877 Lenovo ThinkServer Gen 5 2.5" 2-Drive Rear Backplane Kit	
4X90F92980 Lenovo ThinkServer Gen 5 DisplayPort to VGA Dongle	
4XF0G45876 Lenovo ThinkServer Gen 5 Cable Management Bar	
4X90F92964 ThinkServer C13-C14 WW 250V 10A 1.8m Jumper Cord	
4XA0E97775 ThinkPad UltraSlim USB DVD Burner	
Microsoft Windows Server ROK	
4XI0E51561 Windows Server 2012 R2 Standard ROK (2 CPU/2VMs)	
4XI0E51562 Windows Server 2012 R2 Datacenter ROK (2 CPU)	
4XI0E51563 Windows Server 2012 R2 Essentials ROK (1-2 CPU)	

### ThinkServer RD650 Overview

### ThinkServer RD650 - Front and rear view

ThinkServer RD650 with 3.5" Disk Bay - Front view



ThinkServer RD650 with 2.5" + 3.5" Disk Bay - Front view



ThinkServer RD650 with 2.5" Disk Bay - Front view



Note: Some modules are optional depending on models.

ThinkServer RD650 - Rear view (All chassis types share one rear view)



### ThinkServer RD650 supporting list for front disk drive bays, rear disk drive bays, ultraslim optical bays, tape drive bays, M.2 SSD drives

			When this AnyRAID is selected, the type of internal storage can be supported									
Chassis Type	Front Disk Bays Supported	Ultraslim Optical Bay Supported	AnyRAID 110i (SATA)	AnyRAID 510i (SATA/SAS)	AnyRAID 720i (SATA/SAS)	AnyRAID 720ix (SATA/SAS)						
ThinkServer RD650 with 3.5" Disk Bay	6 x 3.5"	-	Front bay	Front bay	Front bay	-						
THIRDEIVELLIDOSO WILLIO.S DISK Day	12 x 3.5"	-	-	-	-	Front bay + rear bay/M.2 SSD						
ThinkServer RD650 with 2.5" + 3.5" Disk Bay	6 x 2.5" + 9 x 3.5"	-	-	-	-	Front bay + rear bay/M.2 SSD						
	8 x 2.5"	Optional	-	Front bay	Front bay	Front bay + rear bay/M.2 SSD/Tape						
Think Coming DDC50 with 0.5" Dick Dov	16 x 2.5"	Optional	-	-	-	Front bay + rear bay/M.2 SSD						
ThinkServer RD650 with 2.5" Disk Bay	24 x 2.5"	-	-	-	-	Front bay + rear bay/M.2 SSD						
	No front bay	-	M.2 SSD	-	-	-						

For a list of all supported options, Please see *ThinkServer RD650 Options* sheet.

Note:
1. "- " shows the configuration is not available.
2. Tape drive, rear disk drive, and M.2 SSD can not be supported simultaneously, only one device can be selected per system.
3. Rear disk bay supports SATA only.

Type-					Disk		M.2/SD	PCIe SSD	Slots (HL/		Таре	Discrete		Chassis intrusion	Svstem	Preloaded	Base	
model	Processor	2nd CPU	Memory	AnyRAID	bays	Disk drives	module	adpr	FHFL)	Optical	drive	ethernet	TPM	switch	mgmt	os	wty	Power
70D0000FUX	1xE5-2609 v3 6C/1.9GHz/ 15MB/85W/1600MHz	4XG0F28820	1x8GB 2133MHz RDIMM	720ix +1GB RAM	12x3.5" HS	Open	No	No	3/0	None	None	No	TPM	No	TSM	No	3-year	1100Wx1 Platinum
70D0000GUX	1xE5-2620 v3 6C/2.4GHz/ 15MB/85W/1866MHz	4XG0F28819	1x8GB 2133MHz RDIMM	720ix +1GB RAM	12x3.5" HS	Open	No	No	3/0	None	None	No	TPM	No	TSM	No	3-year	1100Wx1 Platinum
70D0000HUX	1xE5-2640 v3 8C/2.6GHz/ 20MB/90W/1866MHz	4XG0F28817	1x8GB 2133MHz RDIMM	720ix +1GB RAM	12x3.5" HS	Open	No	No	3/0	None	None	No	TPM	No	TSM	No	2 voor	1100Wx1 Platinum
70D0000JUX	1xE5-2650 v3 10C/2.3GHz/ 25MB/105W/2133MHz	4XG0F28816	1x8GB 2133MHz RDIMM	720ix +1GB RAM	12x3.5" HS	Open	No	No	3/0	None	None	No	TPM	No	TSM	No	3-year	1100Wx1 Platinum
70D0000KUX	1xE5-2690 v3 12C/2.6GHz/ 30MB/135W/2133MHz	4XG0F28811	1x8GB 2133MHz RDIMM	720ix +1GB RAM	12x3.5" HS	Open	No	No	3/0	None	None	No	TPM	No	TSM	No	3-voor	1100Wx1 Platinum
Component	s Specification					Com	nonents	S	pecific	ation								

Form factor  2U rack Up to two 145W Intel Xeon E5-2600 v3 family processors with 18 cores up to 2.3GHz, 16 cores up to 2.3GHz, 14 cores up to 2.6GHz, 12 cores up to 2.6GHz, 10 cores up to 2.6GHz, 8 cores up to 3.2GHz, 6 cores up to 3.4GHz, 4 cores up to 3.5GHz. Two QPI link up to 9.6 GT/S.  Up to 2133MHz memory speed. Up to 45MB cache Intel C612 Platform Controller Hub (PCH)  Memory DIMMs Memory capacity Memory capacity Memory protection  SagGB (RDIMM, 16GB x 24)/768GB (LRDIMM, 32GB x 24) Memory protection  Supports AnyRAID 110; 510; and 720i for 6 x 5.5" model, 720ix for 12 x 3.5" model. RAID 0, 1, 10 with AnyRAID 110; 6Gb/s SATA, optional key for RAID 550. RAID 0, 1, 10 with AnyRAID 150; 6Gb/s SAS/SATA, optional key for RAID 550. RAID 0, 1, 10, 5, 50, 6, 60 with AnyRAID 720i/720ix, 12Gb/s SAS/SATA, 720i needs cache for RAID 6/60 support. 720ix must have a cache. Optional cache for 720i/720ix: 1GB read-only memory. 1GB/2GB/4GB flash with super capacitor. Flash options include CacheVault, CacheCade Pro, and FastPath Up to 6 (0-5) or 12 (0-11) 3.5" front hot-swap disk drive bays. Dro 2 optional 2.5" rear disk drive bays on 12 x 3.5" and 720ix models, hot-swap. Rear bays support SATA only.  Internal storage  M.2 SSD module  M.2 SSD module  M.2 SSD module  Dro 10 c 2 SDHC flash cards via optional M.2 module on 12 x 3.5" and 720ix models, 80GB or 120GB each  PCIe SSD adapter Optical drive None  Network interfaces  Security features  Security features  Mone  One dedicated management port, one AnyFabric slot for customized LOM. Discrete network options is also available via PCIe slots Supports ThinkServer System Manager (TSM), optional TSM Premium.  UEFI. Onboard Aspeed AST2400 graphics/management processor, IPMI 2.0-compliant) associated and processor of the slots of the supports the flow of the supports the flow of the supports of the support	30MB/	135W/2133MHz	4XG01 20011	RDIMM	+1GB RAM	HS	Орсп	
Form factor  2U rack Up to two 145W Intel Xeon E5-2600 v3 family processors with 18 cores up to 2.3GHz, 16 cores up to 2.3GHz, 14 cores up to 2.6GHz, 12 cores up to 2.6GHz, 10 cores up to 2.6GHz, 8 cores up to 3.2GHz, 6 cores up to 3.4GHz, 4 cores up to 3.5GHz. Two QPI link up to 9.6 GT/S.  Up to 2133MHz memory speed. Up to 45MB cache Intel C612 Platform Controller Hub (PCH)  Memory DIMMs Memory capacity Memory capacity Memory protection  ECC, memory mirroring, lockstep, and memory sparing Supports AnyRAID 110i, 510i, and 720i for 6 x 3.5" model, 720ix for 12 x 3.5" model. RAID 0, 1, 10 with AnyRAID 110i, 66b/s SAIA, optional key for RAID 5.6 RAID 0, 1, 10 with AnyRAID 510i, 6Gb/s SAS/SATA, optional key for RAID 5.6 RAID 0, 1, 10, 50, 6, 60 with AnyRAID 720i/T20ix, 12Gb/s SAS/SATA, 720i needs cache for RAID 6/60 support. 720ix must have a cache. Optional cache for 720i/720ix: 16B read-only memory, 16B/2GB/4GB flash with super capacitor. Flash options include CacheVault. CacheCade Pro, and FastPath Up to 6 (0-5) or 12 (0-11) 3.5" front hot-swap disk drive bays. Up to 2 optional 2.5" rear disk drive bays on 12 x 3.5" and 720ix models, not-swap. Rear bays support sATA only.  Internal storage  M.2 SSD module  Disc SSD adapter Optical drive None Network interfaces  Security features  Systems management  One dedicated management port, one AnyFabric slot for customized LOM. Discrete network options also available via PCIe slots Supports ThinkServer management controller (BMC). Compliant). Optional chassis intrusion switch Supports ThinkServer was also available via PCIe slots Supports ThinkServer management software: Diagnostics, Deployment Manager, Energy Manager, System Manager, Power Planner  Microsoft Windows Server 2012 R2/2012/2008 R2. Windows Small Business Server 2011. Red Hat Enterprise Linux 6.5/6.6/7. SUSE Linux Enterprise Server 11.  Vivia rear first for the processor of t	Components	Specification						
2.3GHz, 16 cores up to 2.3GHz, 14 cores up 1o 2.6GHz, 10 cores up to 2.6GHz, 10 cores up to 3.5GHz. Two QPI link up to 9.6 GT/s.  Up to 2133MHz memory speed. Up to 45MB cache  Intel C612 Platform Controller Hub (PCH)  24 DIMM sockets (12 DIMMs per processor), 8-channel capable (4-channel per processor), 8-DIMM and LRDIMM (cannot be intermixed), DDR4, up to 2133MHz  Memory capacity  Memory protection  Save Berger of the Common of the	Form factor	2U rack						╓
Chipset Intel C612 Platform Controller Hub (PCH)  24 DIMM sockets (12 DIMMs per processor), 8-channel capable (4-channel per processor). RDIMM and LRDIMM (cannot be intermixed), DDR4, up to 2133MHz  Memory capacity  Memory protection  Supports AnyRAID 1101, 5101, and 7201 for 6 x 3.5" model, 7201x for 12 x 3.5" model. RAID 0, 1, 10 with AnyRAID 1101, 66b/s SATA, optional key for RAID 5.50.  ANJRAID support  ANJRAID support  ANJRAID 10, 1, 10, 5, 50, 6, 60 with AnyRAID 7201/7201x. 126b/s SAS/SATA, 7201 needs cache for RAID 6/60 support. 7201x must have a cache.  Optional cache for 7201/7201x: 168 read-only memory. 16B/2GB/4GB flash with super capacitor. Flash options include CacheVault. CacheCade Pro, and FastPath Up to 6 (0-5) or 12 (0-11) 3.5" front hot-swap disk drive bays. Up to 2 optional 2.5" rear disk drive bays on 12 x 3.5" and 7201x models, hot-swap. Rear bays support SATA only.  Internal storage  M.2 SSD module  Dy to 2 SDHC flash cards via optional M.2 module on 12 x 3.5" and 7201x models, 80GB or 120GB each  Dy to 2 SDHC flash cards via optional SD module, 8GB or 32GB each  PCle SSD adapter  Optical drive  None  None  Network interfaces  Security features  Security features  Security features  Operating systems management  Operating systems supported  Operating systems supported  Operating systems supported  None  Operating systems supported  Operating systems supported  None  PROPER SPA Age In Interpretable Service with 9x5/NBD.	Processor	2.3GHz, 16 cores under to 2.60 4 cores up to 3.5Gl	up to 2.3GHz, GHz, 8 cores Hz. Two QPI I	14 cores up to up to 3.2GHz, 6 ink up to 9.6 G	2.6GHz, 12 co cores up to 3 T/s.	ores up t		F
Memory DIMMs   24 DIMM sockets (12 DIMMs per processor), 8-channel capable (4-channel per processor), RDIMM and LRDIMM (cannot be intermixed), DDR4, up to 2133MHz   384GB (RDIMM, 16GB x 24)/768GB (LRDIMM, 32GB x 24)   Memory protection   ECC, memory mirroring, lockstep, and memory sparing   Supports AnyRAID 110i, 510i, and 720i for 6 x 3.5" model, 720ix for 12 x 3.5" model. RAID 0, 1, 10 with AnyRAID 110i, 6Gb/s SATA, optional key for RAID 5. RAID 0, 1, 10 with AnyRAID 110i, 6Gb/s SAS/SATA, optional key for RAID 5/50. RAID 0, 1, 10, 5, 50, 6, 60 with AnyRAID 720i/720ix. 12Gb/s SAS/SATA. 720i needs cache for RAID 6/60 support. 720ix must have a cache. Optional cache for 720i/720ix: 1GB read-only memory. 1GB/2GB/4GB flash with super capacitor. Flash options include CacheVault, CacheCade Pro, and FastPath. Up to 6 (0-5) or 12 (0-11) 3.5" front hot-swap disk drive bays. Up to 2 optional 2.5" rear disk drive bays on 12 x 3.5" and 720ix models, hot-swap. Rear bays support SATA only.  Internal storage   Supports the following hot-swap drives: 3.5" hard drive up to 6TB (SATA/SAS), 2.5" hard drive up to 1.8TB (SAS)/1TB (SATA). 2.5" SSD up to 800GB (SATA/SAS). Up to 2 SDB drives via optional M.2 module on 12 x 3.5" and 720ix models, 80GB or 120GB each   Via to 2 SDHC flash cards via optional SD module, 8GB or 32GB each   Supports 1.6TB or 3.2TB PCle SSD adapter   None   Non	Chipset							
Memory protection ECC, memory mirroring, lockstep, and memory sparing  Supports AnyRAID 110i, 510i, and 720i for 6 x 3.5" model, 720ix for 12 x 3.5" model.  RAID 0, 1, 10 with AnyRAID 110i, 6Gb/s SATA, optional key for RAID 5.  RAID 0, 1, 10 with AnyRAID 510i, 6Gb/s SAS/SATA, optional key for RAID 5.  RAID 0, 1, 10 with AnyRAID 510i, 6Gb/s SAS/SATA, optional key for RAID 5.  RAID 0, 1, 10, 5, 50, 6, 60 with AnyRAID 720i/r20ix. 12Gb/s SAS/SATA. 720i needs cache for RAID 6/60 support. 720ix must have a cache.  Optional cache for 720i/r20ix: 1GB read-only memory. 1GB/2GB/4GB flash with super capacitor. Flash options include CacheVault, CacheCade Pro, and FastPath  Up to 6 (0-5) or 12 (0-11) 3.5" front hot-swap disk drive bays. Up to 2 optional 2.5" rear disk drive bays on 12 x 3.5" and 720ix models, hot-swap. Rear bays support SATA only.  Internal storage  Internal s	Memory DIMMs	processor). RDIMN	1 and LRDIMI	M (cannot be in	termixed), DDI			F
Supports AnyRAID 110i, 510i, and 720i for 6 x 3.5" model, 720ix for 12 x 3.5" model. RAID 0, 1, 10 with AnyRAID 510i, 6Gb/s SATA, optional key for RAID 5/50. RAID 0, 1, 10 with AnyRAID 510i, 6Gb/s SAS/SATA, optional key for RAID 5/50. RAID 0, 1, 10, 5, 50, 6, 60 with AnyRAID 720i/720ix. 12Gb/s SAS/SATA. 720i needs cache for RAID 6/60 support. 720ix must have a cache. Optional cache for 720i/720ix: 1GB read-only memory. 1GB/2GB/4GB flash with super capacitor. Flash options include CacheVault, CacheCade Pro, and FastPath Up to 6 (0-5) or 12 (0-11) 3.5" front hot-swap disk drive bays. Up to 2 optional 2.5" rear disk drive bays on 12 x 3.5" and 720ix models, hot-swap. Rear bays support SATA only.  Internal storage  M.2 SSD module  Up to 2 M.2 SSD drives via optional M.2 module on 12 x 3.5" and 720ix models, 80GB or 120GB each  Up to 2 SDHC flash cards via optional SD module, 8GB or 32GB each  PCIe SSD adapter  Optical drive  None  N								F
RÁID 0, 1, 10 with AnyRAID 110. 6Gb/s SATA, optional key for RAID 5.0. RAID 0, 1, 10 with AnyRAID 510, 6Gb/s SAS/SATA, optional key for RAID 5.0. RAID 0, 1, 10, 5, 50, 6, 60 with AnyRAID 720i/720ix. 12Gb/s SAS/SATA. 720i needs cache for RAID 6/60 support. 720ix must have a cache. Optional cache for 720i/720ix: 1GB read-only memory. 1GB/2GB/4GB flash with super capacitor. Flash options include CacheVault. CacheCade Pro, and FastPath Up to 6 (0-5) or 12 (0-11) 3.5" front hot-swap disk drive bays. Up to 2 optional 2.5" rear disk drive bays on 12 x 3.5" and 720ix models, hot-swap. Rear bays support SATA only.  Internal storage  M.2 SSD module  Up to 2 M.2 SSD drives via optional M.2 module on 12 x 3.5" and 720ix models, 80GB or 120GB each  Up to 2 SDDHC flash cards via optional SD module, 8GB or 32GB each  PCIe SSD adapter Optical drive  None  None  None  None  None  None  None  One dedicated management port, one AnyFabric slot for customized LOM. Discrete network options is also available via PCIe slots  Security features  Security features  Optical drive system Manager (TSM), optional TSM Premium. UEFI. Onboard Aspeed AST2400 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC). Control Panel LEDs shows the status of power, ID, network, system. Supports ThinkServer management software: Diagnostics, Deployment Manager, Energy Manager, System Manager, Partner Pack for VMware vCenter and Microsoft System Center Operations Manager, Power Planner  Microsoft Windows Server 2012 R2/2012/2008 R2. Windows Small Business Server 2011. Red Hat Enterprise Linux 6.5/6.6/7. SUSE Linux Enterprise Server 11. VMware vSphere (ESXi) 5.1 P5/5.5 U2/6.0  3-year limited onsite service with 9x5/NBD.	Memory protection							
Super capacitor. Flash options include CacheVault, CacheCade Pro, and FastPath Up to 6 (0-5) or 12 (0-11) 3.5" front hot-swap disk drive bays. Up to 2 optional 2.5" rear disk drive bays on 12 x 3.5" and 720ix models, hot-swap. Rear bays support SATA only.  Internal storage Supports the following hot-swap drives: 3.5" hard drive up to 6TB (SATA/SAS), 2.5" hard drive up to 1.8TB (SAS)/1TB (SATA), 2.5" SSD up to 800GB (SATA/SAS).  M.2 SSD module Up to 2 M.2 SSD drives via optional M.2 module on 12 x 3.5" and 720ix models, 80GB or 120GB each SD module Up to 2 SDHC flash cards via optional SD module, 8GB or 32GB each PCIe SSD adapter Optical drive None Network interfaces None Network interfaces Security features One dedicated management port, one AnyFabric slot for customized LOM. Discrete network options is also available via PCIe slots Security features Systems Manager (TSM), optional Trusted Platform Module (TCG 1.2-compliant). Optional chassis intrusion switch Supports ThinkServer System Manager (TSM), optional TSM Premium. UEFI. Onboard Aspeed AST2400 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC). Control Panel LEDs shows the status of power, ID, network, system. Supports ThinkServer management software: Diagnostics, Deployment Manager, Energy Manager, System Manager, Partner Pack for VMware vCenter and Microsoft System Center Operations Manager, Power Planner  Operating systems supported  Operating systems Server 2011 Re/2012/2008 R2. Windows Small Business Server 2011. Red Hat Enterprise Linux 6.5/6.6/7. SUSE Linux Enterprise Server 11. VMware vSphere (ESXi) 5.1 PS/5.5 U2/6.0  3-year limited onsite service with 9x5/NBD.	AnyRAID support	RAID 0, 1, 10 with A RAID 0, 1, 10 with A RAID 0, 1, 10, 5, 50 cache for RAID 6/6	AnyRAID 110i AnyRAID 510i 0, 6, 60 with A 0 support. 72	. 6Gb/s SATA, o , 6Gb/s SAS/SA AnyRAID 720i/7 0ix must have a	ptional key for ATA, optional ke '20ix. 12Gb/s S a cache.	RAID 5. ey for RA SAS/SAT	ID 5/50. A. 720i needs	1
Up to 6 (0-5) or 12 (0-11) 3.5" front hot-swap disk drive bays. Up to 2 optional 2.5" rear disk drive bays on 12 x 3.5" and 720ix models, hot-swap. Rear bays support SATA only.  Internal storage Supports the following hot-swap drives: 3.5" hard drive up to 6TB (SATA/SAS), 2.5" hard drive up to 1.8TB (SAS)/1TB (SATA), 2.5" SSD up to 800GB (SATA/SAS), 2.5" hard drive up to 1.8TB (SAS)/1TB (SATA), 2.5" SSD up to 800GB (SATA/SAS), 2.5" hard drive up to 2 M.2 SSD drives via optional M.2 module on 12 x 3.5" and 720ix models, 80GB or 120GB each  SD module Up to 2 SDHC flash cards via optional SD module, 8GB or 32GB each  PCIe SSD adapter Supports 1.6TB or 3.2TB PCIe SSD adapter  Optical drive None  None One dedicated management port, one AnyFabric slot for customized LOM. Discrete network options is also available via PCIe slots  Security features Power-on and administrator password. Optional Trusted Platform Module (TCG 1.2-compliant). Optional chassis intrusion switch  Supports ThinkServer System Manager (TSM), optional TSM Premium. UEFI. Onboard Aspeed AST2400 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC). Control Panel LEDs shows the status of power, ID, network, system. Supports ThinkServer management software: Diagnostics, Deployment Manager, Energy Manager, System Manager, Partner Pack for VMware vCenter and Microsoft System Center Operations Manager, Power Planner  Operating systems supported Microsoft Windows Server 2012 R2/2012/2008 R2. Windows Small Business Server 2011. Red Hat Enterprise Linux 6.5/6.607. SUSE Linux Enterprise Server 11. VMware vSphere (ESXi) 5.1 P5/5.5 U2/6.0  3-year limited onsite service with 9x5/NBD.								S
Internal storage  Supports the following hot-swap drives: 3.5" hard drive up to 6TB (SATA/SAS), 2.5" hard drive up to 1.8TB (SAS)/1TB (SATA), 2.5" SSD up to 800GB (SATA/SAS).  M.2 SSD module  Up to 2 M.2 SSD drives via optional M.2 module on 12 x 3.5" and 720ix models, 80GB or 120GB each  Up to 2 SDHC flash cards via optional SD module, 8GB or 32GB each  PCIe SSD adapter  Optical drive  None  Tape drive bays  None  One dedicated management port, one AnyFabric slot for customized LOM. Discrete network options is also available via PCIe slots  Security features  Power-on and administrator password. Optional Trusted Platform Module (TCG 1.2-compliant). Optional chassis intrusion switch  Supports ThinkServer System Manager (TSM), optional TSM Premium. UEFI. Onboard Aspeed AST2400 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC).  Control Panel LEDs shows the status of power, ID, network, system. Supports ThinkServer management software: Diagnostics, Deployment Manager, Energy Manager, System Manager, Partner Pack for VMware vCenter and Microsoft System Center Operations Manager, Power Planner  Operating systems supported  Operating systems supported  Operating systems  Server 2011. Red Hat Enterprise Linux 6.5/6.6/7. SUSE Linux Enterprise Server 11. VMware vSphere (ESXi) 5.1 P5/5.5 U2/6.0  3-year limited onsite service with 9x5/NBD.	Disk drive bays	Up to 6 (0-5) or 12 rear disk drive bays	(0-11) 3.5" fro	ont hot-swap di	sk drive bays.	Up to 2 o	optional 2.5"	
So module Up to 2 SDHC flash cards via optional SD module, 8GB or 32GB each School SD adapter Supports 1.6TB or 3.2TB PCle SSD adapter Optical drive None Network interfaces One dedicated management port, one AnyFabric slot for customized LOM. Discrete network options is also available via PCle slots  Security features Power-on and administrator password. Optional Trusted Platform Module (TCG 1.2-compliant). Optional chassis intrusion switch Supports ThinkServer System Manager (TSM), optional TSM Premium. UEFI. Onboard Aspeed AST2400 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC). Control Panel LEDs shows the status of power, ID, network, system. Supports ThinkServer management software: Diagnostics, Deployment Manager, Energy Manager, System Manager, Partner Pack for VMware vCenter and Microsoft System Center Operations Manager, Power Planner Microsoft Windows Server 2012 R2/2012/2008 R2. Windows Small Business Server 2011. Red Hat Enterprise Linux 6.5/6.6/7. SUSE Linux Enterprise Server 11. VMware vSphere (ESXi) 5.1 P5/5.5 U2/6.0	Internal storage	Supports the follow hard drive up to 1.8	BTĔ (SAS)/1T	B (SATA), 2.5"	SSD up to 800	GB (SA	TA/SAS).	1
PCIe SSD adapter Optical drive None Tape drive bays None Network interfaces Security features Security features Systems management management Tape drive bays None Network interfaces Security features Security features Security features Systems Tape drive bays Systems Tape drive bays None Operating systems Supports Supports ThinkServer System Manager (TSM), optional Trusted Platform Module (TCG) 1.2-compliant). Optional chassis intrusion switch Supports ThinkServer System Manager (TSM), optional TSM Premium. UEFI. Onboard Aspeed AST2400 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC). Control Panel LEDs shows the status of power, ID, network, system. Supports ThinkServer management software: Diagnostics, Deployment Manager, Energy Manager, System Manager, Partner Pack for VMware vCenter and Microsoft System Center Operations Manager, Power Planner Operating systems Server 2011. Red Hat Enterprise Linux 6.5/6.6/7. SUSE Linux Enterprise Server 11. VMware vSphere (ESXi) 5.1 P5/5.5 U2/6.0  Brace warranty  3-year limited onsite service with 9x5/NBD.	M.2 SSD module			onal M.2 modul	e on 12 x 3.5"	and 720	ix models,	١
Optical drive None Tape drive bays None Network interfaces Network options is also available via PCle slots Security features Power-on and administrator password. Optional Trusted Platform Module (TCG 1.2-compliant). Optional chassis intrusion switch Supports ThinkServer System Manager (TSM), optional TSM Premium. UEFI. Onboard Aspeed AST2400 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC). Control Panel LEDs shows the status of power, ID, network, system. Supports ThinkServer management software: Diagnostics, Deployment Manager, Energy Manager, System Manager, Partner Pack for VMware vCenter and Microsoft System Center Operations Manager, Power Planner Operating systems supported Microsoft Windows Server 2012 R2/2012/2008 R2. Windows Small Business Server 2011. Red Hat Enterprise Linux 6.5/6.6/7. SUSE Linux Enterprise Server 11. VMware vSphere (ESXi) 5.1 P5/5.5 U2/6.0  3-year limited onsite service with 9x5/NBD.	SD module	Up to 2 SDHC flash	n cards via op	tional SD mod	ule, 8GB or 32	GB each	1	H
Tape drive bays  None  Network interfaces  One dedicated management port, one AnyFabric slot for customized LOM. Discrete network options is also available via PCle slots  Security features  Power-on and administrator password. Optional Trusted Platform Module (TCG 1.2-compliant). Optional chassis intrusion switch  Supports ThinkServer System Manager (TSM), optional TSM Premium.  UEFI. Onboard Aspeed AST2400 graphics/management processor,  IPMI 2.0-compliant baseboard management controller (BMC).  Control Panel LEDs shows the status of power, ID, network, system.  Supports ThinkServer management software: Diagnostics, Deployment Manager, Energy Manager, System Manager, Partner Pack for VMware vCenter and Microsoft System Center Operations Manager, Power Planner  Operating systems with Server 2011 Re/2/2012/2008 R2. Windows Small Business Server 2011. Red Hat Enterprise Linux 6.5/6.6/7. SUSE Linux Enterprise Server 11. VMware vSphere (ESXi) 5.1 P5/5.5 U2/6.0  Brook warranty  One dedicated management port, one AnyFabric slot for customized LOM. Discrete network posteriors also posteriors with System Monager (TSM), optional TSM Premium.  UEFI. Onboard Aspeed AST2400 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC).  Control Panel LEDs shows the status of power, ID, network, system.  Supports ThinkServer management software: Diagnostics, Deployment Manager, Power Planner  Wicrosoft Windows Server 2012 R2/2012/2008 R2. Windows Small Business  Server 2011. Red Hat Enterprise Linux 6.5/6.6/7. SUSE Linux Enterprise Server 11. VMware vSphere (ESXi) 5.1 P5/5.5 U2/6.0	PCIe SSD adapter	Supports 1.6TB or	3.2TB PCIe S	SSD adapter				Н
Network interfaces  One dedicated management port, one AnyFabric slot for customized LOM. Discrete network options is also available via PCle slots  Security features  Power-on and administrator password. Optional Trusted Platform Module (TCG 1.2-compliant). Optional chassis intrusion switch  Supports ThinkServer System Manager (TSM), optional TSM Premium.  UEFI. Onboard Aspeed AST2400 graphics/management processor,  IPMI 2.0-compliant baseboard management controller (BMC).  Control Panel LEDs shows the status of power, ID, network, system.  Supports ThinkServer management software: Diagnostics, Deployment Manager, Energy Manager, System Manager, Partner Pack for VMware vCenter and Microsoft System Center Operations Manager, Power Planner  Operating systems supported  Microsoft Windows Server 2012 R2/2012/2008 R2. Windows Small Business Server 2011. Red Hat Enterprise Linux 6.5/6.6/7. SUSE Linux Enterprise Server 11. VMware vSphere (ESXi) 5.1 P5/5.5 U2/6.0  3-year limited onsite service with 9x5/NBD.	Optical drive	None						1
Network interfaces  network options is also available via PCle slots  Security features  Power-on and administrator password. Optional Trusted Platform Module (TCG 1.2-compliant). Optional chassis intrusion switch  Supports ThinkServer System Manager (TSM), optional TSM Premium.  UEFI. Onboard Aspeed AST2400 graphics/management processor,  IPMI 2.0-compliant baseboard management controller (BMC).  Control Panel LEDs shows the status of power, ID, network, system.  Supports ThinkServer management software: Diagnostics, Deployment Manager, Energy Manager, System Manager, Partner Pack for VMware vCenter and Microsoft System Center Operations Manager, Power Planner  Operating systems supported  Operating systems Server 2011. Red Hat Enterprise Linux 6.5/6.6/7. SUSE Linux Enterprise Server 11. VMware vSphere (ESXi) 5.1 P5/5.5 U2/6.0  3-year limited onsite service with 9x5/NBD.	Tape drive bays	None						١.
Security features  1.2-compliant). Optional chassis intrusion switch  Supports ThinkServer System Manager (TSM), optional TSM Premium. UEFI. Onboard Aspeed AST2400 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC). Control Panel LEDs shows the status of power, ID, network, system. Supports ThinkServer management software: Diagnostics, Deployment Manager, Energy Manager, System Manager, Partner Pack for VMware vCenter and Microsoft System Center Operations Manager, Power Planner  Operating systems supported  Microsoft Windows Server 2012 R2/2012/2008 R2. Windows Small Business Server 2011. Red Hat Enterprise Linux 6.5/6.6/7. SUSE Linux Enterprise Server 11. VMware vSphere (ESXi) 5.1 P5/5.5 U2/6.0  3-year limited onsite service with 9x5/NBD.	Network interfaces	network options is	also available	via PCIe slots				Ų
Systems management  Systems management  Microsoft Windows Server 2011. Red Hat Enterprise Linux 6.5/6.6/7. SUSE Linux Enterprise Server 11.  Vi Myare vSphere (ESXi) 5.1 P5/5.5 U2/6.0  Systems  UEFI. Onboard Aspeed AST2400 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC). Control Panel LEDs shows the status of power, ID, network, system. Supports ThinkServer management software: Diagnostics, Deployment Manager, Energy Manager, System Manager, Partner Pack for VMware vCenter and Microsoft System Center Operations Manager, Power Planner  Microsoft Windows Server 2012 R2/2012/2008 R2. Windows Small Business Server 2011. Red Hat Enterprise Linux 6.5/6.6/7. SUSE Linux Enterprise Server 11. VMware vSphere (ESXi) 5.1 P5/5.5 U2/6.0  Systems  John Microsoft Windows Small Business Server 2011. Red Hat Enterprise Linux 6.5/6.6/7. SUSE Linux Enterprise Server 11. VMware vSphere (ESXi) 5.1 P5/5.5 U2/6.0	Security features	1.2-compliant). Opt	ional chassis	intrusion switch	h		,	15
Server 2011. Red Hat Enterprise Linux 6.5/6.6/7. SUSE Linux Enterprise Server 11. VMware vSphere (ESXi) 5.1 P5/5.5 U2/6.0  Reconstruction of the property of t	Systems management	UEFI. Onboard Asp IPMI 2.0-compliant Control Panel LED: Supports ThinkSer Energy Manager, S System Center Ope	beed AST240 baseboard mas shows the sover managem Bystem Managerations	O graphics/mar nanagement co tatus of power, nent software: D ger, Partner Pa ager, Power Pla	nagement proc ntroller (BMC). ID, network, s Diagnostics, De ck for VMware inner	essor, ystem. eploymer vCenter	nt Manager, and Microsoft	0,0,0,0,0,0
		Server 2011. Red F VMware vSphere (	Hat Enterprise ESXi) 5.1 P5/	e Linux 6.5/6.6/ /5.5 U2/6.0				
	Base warranty							2

ш	Components	openioa.ion								
	Power supply	Up to two redundant hot-swap 550 W ac, 750 W ac, 1100 W ac, or 1600 W ac power supplies. 550 W, 1100 W, and 1600 W are 80 PLUS Platinum qualified, 750 W is 80 PLUS Platinum or Titanium qualified. 750 W Titanium is 200V - 240V, others are 110V - 240V. 1600 W will automatically operate in 1100W if the system line input is 100-127V. Up to 135W CPU on 550 W and 12 x 3.5" model								
1	Graphics	Onboard Aspeed AST2400 with 16MB memory, one DisplayPort on rear.  Maximum resolution: 1920x1200@60Hz								
	Front ports	None								
1	Rear ports	One DisplayPort, two USB 3.0, one RJ-45 (dedicate mgmt), one serial (9-pin)								
1[	Cooling	Six (5+1, dual processors) or four (3+1, single processor), hot-swap								
1[	Hot-swap parts	Disk drives, power supplies, and fans								
IL	Noise emissions	Operating: < 6.5 Bels, Idle: < 6 Bels (Maximum configuration)								
- 11	Environmental specification	Temperature - operating Temperature - non operating (no package) Temperature - non operating (with package) Altitude - operating Humidity - operating Humidity - storage (with package)  Temperature - non operating (with package)  41 ° F to 113 ° F (5 ° C to 45 ° C) -10 ° C to 60 ° C (Unpressurized): 0-10000ft (0-3048m) 8%~90%, non-condensing 8%~90%, non-condensing								
		Note: 45 ° C continuous operation configuration limitation: no 135W or 145W CPU/no GPU card/ redundant PSU/no FLFH card/no PCIe SSD adapter.								
1	Weight	Minimum configuration: 16 kg (35.3 lb), maximum: 32 kg (70.5 lb)								
	Dimensions	Height: 87 mm (3.4 in), width: 482 mm (19 in), depth: 764 mm (30 in)								





### **Expansion slots**

Up to eight half-length PCIe 3.0 x 16 slots depending on the riser cards installed:

Slot 1 (riser card 1): PCle 3.0 x 16, half length, full height Slot 2 (riser card 1): PCle 3.0 x 16, half length, full height Slot 3 (riser card 1): PCle 3.0 x 16, half length, full height Slot 3 (riser card 1): PCle 3.0 x 16, half length, full height

Slot 4 (onboard): PCle 3.0 x 16, low-profile, half length, requires 2nd CPU
Slot 5 (riser card 2): PCle 3.0 x 16, half length, full height, requires 2nd riser card and 2nd CPU
Slot 6 (riser card 2): PCle 3.0 x 16, half length, full height, requires 2nd riser card and 2nd CPU

Slot 7 (onboard): PCIe 3.0 x 16, low-profile, half length, requires 2nd CPU Slot 8 (onboard): PCIe 3.0 x 16, low-profile, half length, requires 2nd CPU

Note: Slot 1-8 are x8 wired. Full height and full length PCIe x16 slots is optional on 2.5" models only.

### Core Options for ThinkServer RD650 (partial)

4X70F28589 ThinkServer 8GB DDR4-2133MHz (1Rx4) RDIMM

4XF0G45881 ThinkServer 2U x8/x8/x8 PCle Riser Kit

4X20F28577 Lenovo ThinkServer Gen 5 1100W Platinum Hot Swap Power Supply

4XF0G45867 ThinkServer System Manager Premium (TSM Premium)

4X90F92980 ThinkServer DisplayPort to VGA Dongle

Type- model	Processor	2nd CPU	Memory	AnyRAID	Disk bays	Disk drives	M.2/SD module		Slots (HL/ FHFL)	Optical		Discrete ethernet			System mgmt	Preloaded OS	Base wty	Power
70D00025UX	1xE5-2630 v3 8C/2.4GHz/ 20MB/85W/1866MHz	4XG0F28818	1x8GB 2133MHz RDIMM	720ix +1GB RAM	12x3.5" HS	Open	No	No	3/0	None	None	No	TPM	No	TSM	No	3-year	1100Wx1 Platinum
70D00026UX	1xE5-2603 v3 6C/1.6GHz/ 15MB/85W/1600MHz	4XG0F28821	1x8GB 2133MHz RDIMM	110i	6x3.5" HS	Open	No	No	0/0	None	None	No	ТРМ	No	TSM	No	3-year	550Wx1 Platinum

Components	Specification	Components	Specification
Form factor	2U rack		Up to two redun
	Up to two 145W Intel Xeon E5-2600 v3 family processors with 18 cores up to		ac power suppli
	2.3GHz, 16 cores up to 2.3GHz, 14 cores up to 2.6GHz, 12 cores up to 2.6GHz,	Power supply	qualified, 750 W
Processor	10 cores up to 2.6GHz, 8 cores up to 3.2GHz, 6 cores up to 3.4GHz,	. c.r.c. capp.y	is 200V - 240V,
	4 cores up to 3.5GHz. Two QPI link up to 9.6 GT/s.		1100W if the sys
Chinaat	Up to 2133MHz memory speed. Up to 45MB cache		Onboard Aspee
Chipset	Intel C612 Platform Controller Hub (PCH)	Graphics	Maximum resolu
Memory DIMMs	24 DIMM sockets (12 DIMMs per processor), 8-channel capable (4-channel per processor). RDIMM and LRDIMM (cannot be intermixed), DDR4, up to 2133MHz	Front ports	None
Memory capacity	384GB (RDIMM, 16GB x 24)/768GB (LRDIMM, 32GB x 24)	Rear ports	One DisplayPort
	ECC, memory mirroring, lockstep, and memory sparing	Cooling	Six (5+1, dual p
momery protection	Supports AnyRAID 110i, 510i, and 720i for 6 x 3.5" model, 720ix for 12 x 3.5" model.	Hot-swap parts	Disk drives, pow
	RAID 0, 1, 10 with AnyRAID 110i. 6Gb/s SATA, optional key for RAID 5.	Noise emissions	Operating: < 6.5
	RAID 0, 1, 10 with AnyRAID 510i, 6Gb/s SAS/SATA, optional key for RAID 5/50.	111111111111111111111111111111111111111	Temperature - operat
AnyRAID support	RAID 0, 1, 10, 5, 50, 6, 60 with AnyRAID 720i/720ix. 12Gb/s SAS/SATA. 720i needs		Temperature - non or
	cache for RAID 6/60 support. 720ix must have a cache.		Temperature - non op
	Optional cache for 720i/720ix: 1GB read-only memory. 1GB/2GB/4GB flash with	Environmental specification	Altitude - operating Humidity - operating
	super capacitor. Flash options include CacheVault, CacheCade Pro, and FastPath Up to 6 (0-5) or 12 (0-11) 3.5" front hot-swap disk drive bays. Up to 2 optional 2.5"	Specification	Humidity - storage (v
Disk drive bays	rear disk drive bays on 12 x 3.5" and 720ix models, hot-swap. Rear bays support		Note: 45 ° C continuo
,	SATA only.		redundant PSU/no Fi
lata a lata a s	Supports the following hot-swap drives: 3.5" hard drive up to 6TB (SATA/SAS), 2.5"	Weight	Minimum config
Internal storage	hard drive up to 1.8TB (SAS)/1TB (SATA), 2.5" SSD up to 800GB (SATA/SAS).	Dimensions	Height: 87 mm (
M 2 SSD modula	Up to 2 M.2 SSD drives via optional M.2 module on 12 x 3.5" and 720ix models,		
	80GB or 120GB each	0 3	6 9
SD module	Up to 2 SDHC flash cards via optional SD module, 8GB or 32GB each	1 4	7 10
	Supports 1.6TB or 3.2TB PCIe SSD adapter	2 5	8 11
-	None		
Tape drive bays	None	Expansion slots	
Network interfaces	One dedicated management port, one AnyFabric slot for customized LOM. Discrete	Up to eight half-leng	ath PCIa 3 0 v 16
	network options is also available via PCIe slots	Slot 1 (riser card 1)	
Security features	Power-on and administrator password. Optional Trusted Platform Module (TCG 1.2-compliant). Optional chassis intrusion switch	Slot 2 (riser card 1)	
	Supports ThinkServer System Manager (TSM), optional TSM Premium.	Slot 3 (riser card 1)	
	UEFI. Onboard Aspeed AST2400 graphics/management processor,	Slot 4 (onboard):	PCIe 3.0 x 16,
Cyctomo	IPMI 2.0-compliant baseboard management controller (BMC).	Slot 5 (riser card 2)	
Systems management	Control Panel LEDs shows the status of power, ID, network, system.	Slot 6 (riser card 2)	
Inanagement	Supports ThinkServer management software: Diagnostics, Deployment Manager,	Slot 7 (onboard):	PCIe 3.0 x 16, I
	Energy Manager, System Manager, Partner Pack for VMware vCenter and Microsoft	Slot 8 (onboard):  Note: Slot 1-8 are x8 wired	PCIe 3.0 x 16, I
	System Center Operations Manager, Power Planner Microsoft Windows Server 2012 R2/2012/2008 R2, Windows Small Business	J	-
Operating systems	0 0011 0 111 1 0 11 0 0 10 0 11 0 11 0 11 0 11	Core Options for 1	
supported	VMware vSphere (ESXi) 5.1 P5/5.5 U2/6.0	4X70F28589 Thin	
_	3-year limited onsite service with 9x5/NBD.	4XF0G45881 Thin	
Base warranty			ovo ThinkServer
Baco warranty	Some parts are Customer Replaceable Units	4XF0G45867 Thin	Leonyar Systam

	Components	Specification								
	Power supply	ac power supplies. 550 W, 1100 W, qualified, 750 W is 80 PLUS Platinu is 200V - 240V, others are 110V - 2	W ac, 750 W ac, 1100 W ac, or 1600 W and 1600 W are 80 PLUS Platinum um or Titanium qualified. 750 W Titanium 40V. 1600 W will automatically operate in 10-127V. Up to 135W CPU on 550 W and 12							
	Graphics	Onboard Aspeed AST2400 with 16 Maximum resolution: 1920x1200@	MB memory, one DisplayPort on rear. 60Hz							
	Front ports	None								
1	Rear ports	One DisplayPort, two USB 3.0, one	RJ-45 (dedicate mgmt), one serial (9-pin)							
1	Cooling	Six (5+1, dual processors) or four (3	3+1, single processor), hot-swap							
1	Hot-swap parts	Disk drives, power supplies, and far	ns							
	Noise emissions	Operating: < 6.5 Bels, Idle: < 6 Bels	(Maximum configuration)							
	Environmental specification	Temperature - operating Temperature - non operating (no package) Temperature - non operating (with package) Altitude - operating Humidity - operating Humidity - storage (with package)	41 ° F to 113 ° F (5 ° C to 45 ° C) -10 ° C to 60 ° C -40 ° C to 60 ° C (Unpressurized): 0-10000ft (0-3048m) 8%-90%, non-condensing 8%-90%, non-condensing							
		Note: 45 °C continuous operation configuration limitation: no 135W or 145W CPU/no GPU card/ redundant PSU/no FLFH card/no PCIe SSD adapter.								
4	Weight	Minimum configuration: 16 kg (35.3 lb), maximum: 32 kg (70.5 lb)								
	Dimensions	Height: 87 mm (3.4 in), width: 482 r	nm (19 in), depth: 764 mm (30 in)							
4		DCU4 9 7	5 6 4							





#### Expansion slots

Jp to eight half-length PCIe 3.0 x 16 slots depending on the riser cards installed:

Slot 1 (riser card 1): PCle 3.0 x 16, half length, full height Slot 2 (riser card 1): PCle 3.0 x 16, half length, full height Slot 3 (riser card 1): PCle 3.0 x 16, half length, full height

Slot 4 (onboard): PCle 3.0 x 16, low-profile, half length, requires 2nd CPU
Slot 5 (riser card 2): PCle 3.0 x 16, half length, full height, requires 2nd riser card and 2nd CPU
Slot 6 (riser card 2): PCle 3.0 x 16, half length, full height, requires 2nd riser card and 2nd CPU

Slot 7 (onboard): PCIe 3.0 x 16, low-profile, half length, requires 2nd CPU Slot 8 (onboard): PCIe 3.0 x 16, low-profile, half length, requires 2nd CPU Note: Slot 1-8 are x8 wired. Full height and full length PCle x16 slots is optional on 2.5" models only.

### Core Options for ThinkServer RD650 (partial)

X70F28589 ThinkServer 8GB DDR4-2133MHz (1Rx4) RDIMM

XF0G45881 ThinkServer 2U x8/x8/x8 PCIe Riser Kit

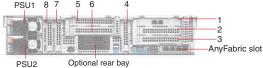
X20F28577 Lenovo ThinkServer Gen 5 1100W Platinum Hot Swap Power Supply XF0G45867 ThinkServer System Manager Premium (TSM Premium)

4X90F92980 ThinkServer DisplayPort to VGA Dongle

Type-					Disk		M.2/SD	PCIe SSD	Таре	Slots (HL/				Chassis intrusion	System	Preloaded	
model	Processor	2nd CPU	Memory	AnyRAID	Bays	Disk drives	module	adpr	drive	FHFL)	Optical	AnyFabric	TPM	switch	mgmt	os	Power
70D0002BUX	1xE5-2630 v3 8C/2.4GHz/ 20MB/85W/1866MHz	4XG0F28818	1x8GB 2133MHz RDIMM	720ix+1GB RAM	12x3.5" HS	Open	No	No	None	3/0	None	No	TPM	No	TSM	No	750Wx1 Platinum

AnyRAID support  RAID 0, 1, 10, 15, 50, 6, 60 with AnyRAID 720i/720ix. 12Gb/s SAS/SATA. 720i needs cache for RAID 6/60 support. 720ix must have a cache. Optional cache for 720i/720ix: 1GB read-only memory. 1GB/2GB/4GB flash with super capacitor. Flash options include Cache/Vault. CacheCade Pro, and FastPath Up to 6 (0-5) or 12 (0-11) 3.5" front hot-swap disk drive bays. Up to 2 optional 2.5" rear disk drive bays on 12 x 3.5" and 720ix models, hot-swap. Rear bays support SATA only.  Internal storage  M.2 SSD module  SD module  SD module  Dy to 2 SSD dapter Optical drive None  Network interfaces  Security features  Security features  Control Panel LEDs shows the status of power, ID, network, system. Supports ThinkServer management software: Diagnostics, Deployment Manager, Energy Manager, System Manager, Partner Pack for VMware vCenter and Microsoft System Center Operations Manager, Power Planner  Microsoft Windows Server 2012 R2/2012/2008 R2. Windows Small Business Server 2011. Red Hat Enterprise Linux 6.5/6.6/7. SUSE Linux Enterprise Server 11. 4X50F28877 Let  RAID 0, 1, 10, 5, 50, 6, 60 with AnyRAID 720i/720ix. 12Gb/s SAS/SATA. 720i needs cache. Optional Cache for 720i/720ix. 12Gb/s SAS/SATA. 720i needs cache. Optional 2.5" front hot-swap drives a cache. Optional 2.5" rear disk drive bays. Up to 2 optional 2.5" rear disk drive bays. Up to 6 flosh (SAS)/1TB (SAS)/1TB (SATA), 2.5" SD up to 6 TB (SATA/SAS), 2.5" hard drive up to 6 TB (SATA	Components	Specification	Components
Processor   2.3GHz, 16 cores up to 2.3GHz, 14 cores up to 3.6GHz, 12 cores up to 2.6GHz, 2 cores up to 3.5GHz, 6 cores up to 3.4GHz, 4 cores up to 3.5GHz, 8 cores up to 3.4GHz, 4 cores up to 3.5GHz. Two QPI link up to 9.6 GT/s.	Form factor	2U rack	
Intel C612 Platform Controller Hub (PCH)   24 DIMMs sockets (12 DIMMs per processor), 8-channel capable (4-channel per processor), RDIMM and LRDIMM (cannot be intermixed), DDR4, up to 2133MHz   384GB (RDIMM, 16GB x 24)/768GB (LRDIMM, 32GB x 24)   384GB (RDIMM, 16GB x 24)/768GB (RDIMM, 16GB x 24)   384GB (RDIMM, 16GB x 24)/768GB (RDIMM, 16GB x 24)/768GB (RDIMM, 16GB x 24)   384GB (RDIMM, 16GB x 24)/769GB (R	Processor	2.3GHz, 16 cores up to 2.3GHz, 14 cores up to 2.6GHz, 12 cores up to 2.6GHz, 10 cores up to 2.6GHz, 8 cores up to 3.2GHz, 6 cores up to 3.4GHz, 4 cores up to 3.5GHz. Two QPI link up to 9.6 GT/s.	Power supply
Memory DIMMs   24 DIMM sockets (12 DIMMs per processor), 8-channel capable (4-channel per processor). RDIMM and LRDIMM (cannot be intermixed), DDR4, up to 2133MHz   Rear ports	Chineat		
memory capacity  Memory protection  ECC, memory mirroring, lockstep, and memory sparing  Supports AnyRAID 110i, 510i, and 720i for 6 x 3.5" model, 720ix for 12 x 3.5" model.  AnyRAID o, 1, 10 with AnyRAID 110i, 66b's SATA, optional key for RAID 5.5  RAID 0, 1, 10 with AnyRAID 110i, 66b's SATA, optional key for RAID 5.5  RAID 0, 1, 10 with AnyRAID 110i, 66b's SATA, optional key for RAID 5.5  RAID 0, 1, 10 with AnyRAID 110i, 66b's SATA, optional key for RAID 5.5  RAID 0, 1, 10, 5, 50, 6, 60 with AnyRAID 720i/720ix. 126b/s SAS/SATA. 720i needs cache for RAID 6/60 support. 720ix must have a cache.  Optional cache for 720i/720ix. 16B read-only memory. 16B/2GB/4GB flash with super capacitor. Flash options include Cache Youtl. CacheCade Pro, and FastPath Up to 6 (0-5) or 12 (0-11) 3.5" front hot-swap disk drive bays. Up to 2 optional 2.5" rear disk drive bays on 12 x 3.5" and 720ix models, hot-swap. Rear bays support SATA only.  Internal storage  M.2 SSD module  Up to 2 SDHC flash cards via optional M.2 module on 12 x 3.5" and 720ix models, 80GB or 120GB each  Doptical drive  None  None  One dedicated management port, one AnyFabric slot for customized LOM. Discrete retwork options is also available via PCle slots  Power-on and administrator password. Optional Trusted Platform Module (TCG 1.2-compliant). Optional chassis intrusion switch  Systems  Systems  Mone  Operating systems  System Center Operations Manager, Partner Pack for VMware vCenter and Microsoft System Center Operations Manager, Partner Pack for VMware Venter and Microsoft System Center Operations Manager, Power Planner  Operating systems  Supported  Memory approach (Power Planner  Driver IninkServer management software: Diagnostics, Deployment Manager, Energy Manager, System Manager, Partner Pack for VMware vCenter and Microsoft System Center Operations Manager, Partner Pack for VMware Venter and Microsoft System Center Operations Manager, Partner Pack for VMware vCenter and Microsoft System Center Operations Manager, Partner Pack for VMware vCenter and	<b>'</b>		Graphics
Memory protection   ECC, memory mirroring, lockstep, and memory sparing   Supports AnyRAID 1101, 5101, and 720i for 6 x 3.5" model, 720ix for 12 x 3.5" model.   RAID 0, 1, 10 with AnyRAID 1101, 66b/s SATA, optional key for RAID 5.50,   RAID 0, 1, 10, 5, 50, 6, 60 with AnyRAID 720i/720ix, 126b/s SAS/SATA. 720i needs   cache for RAID 6/60 support. 720ix must have a cache.   Optional cache for 720i/720ix: 16B read-only memory. 16B/2GB/4GB flash with super capacitor. Flash options include Cache/Vault, CacheCade Pro, and FastPath   Up to 6 (0-5) or 12 (0-11) 3.5" front hot-swap disk drive bays. Up to 2 optional 2.5"   possible ard drive up to 1.8TB (SAS)/1TB (SATA), 2.5" SSD up to 800GB (SATA/SAS), 2.5"   hard drive up to 1.8TB (SAS)/1TB (SATA), 2.5" SSD up to 800GB (SATA/SAS), 2.5"   hard drive up to 1.8TB (SAS)/1TB (SATA), 2.5" SSD up to 800GB (SATA/SAS), 2.5"   hard drive up to 1.8TB (SAS)/1TB (SATA), 2.5" SSD up to 800GB (SATA/SAS), 2.5"   hard drive up to 1.8TB (SAS)/1TB (SATA), 2.5" SSD up to 800GB (SATA/SAS), 2.5"   hard drive up to 1.8TB (SAS)/1TB (SATA), 2.5" SSD up to 800GB (SATA/SAS), 2.5"   hard drive up to 1.8TB (SAS)/1TB (SATA), 2.5" SSD up to 800GB (SATA/SAS), 2.5"   hard drive up to 1.8TB (SAS)/1TB (SATA), 2.5" SSD up to 800GB (SATA/SAS), 2.5"   hard drive up to 1.8TB (SAS)/1TB (SATA), 2.5" SSD up to 800GB (SATA/SAS), 2.5"   hard drive up to 1.8TB (SAS)/1TB (SATA), 2.5" SSD up to 800GB (SATA/SAS), 2.5"   hard drive up to 1.8TB (SAS)/1TB (SATA), 2.5" SSD up to 800GB (SATA/SAS), 2.5"   hard drive up to 1.8TB (SAS)/1TB (SATA), 2.5" SSD up to 800GB (SATA/SAS), 2.5"   hard drive up to 1.8TB (SAS)/1TB (SATA), 2.5" SSD up to 800GB (SATA/SAS), 2.5"   hard drive up to 1.8TB (SAS)/1TB (SATA), 2.5" SSD up to 800GB (SATA/SAS), 2.5"   hard drive up to 1.8TB (SAS)/1TB (SATA), 2.5" SSD up to 800GB (SATA/SAS), 2.5"   hard drive up to 1.8TB (SAS)/1TB (SATA), 2.5" SSD up to 800GB (SATA/SAS), 2.5"   hard drive up to 1.8TB (SAS)/1TB (SATA), 2.5" SSD up to 800GB (SATA/SAS), 2.5"   hard drive up to 1.8TB (SAS)/1TB (SATA),		processor). RDIMM and LRDIMM (cannot be intermixed), DDR4, up to 2133MHz	
Supports AnyRAID 110i, 510i, and 720i for 6 x 3.5" model, 720ix for 12 x 3.5" model. RAID 0, 1, 10 with AnyRAID 110i. 6Gb/s SAS/SATA, optional key for RAID 5.  RAID 0, 1, 10 with AnyRAID 1510i, 6Gb/s SAS/SATA, optional key for RAID 5.  RAID 0, 1, 10, 5, 50, 6, 60 with AnyRAID 720i/720ix. 12Gb/s SAS/SATA. 720i needs cache for RAID 6/60 support. 720ix must have a cache. Optional cache for 720i/720ix: 1GB read-only memory. 1GB/2GB/4GB flash with super capacitor. Flash options include CacheVault, CacheCade Pro, and FastPath Up to 6 (0-5) or 12 (0-11) 3.5" front hot-swap disk drive bays. Up to 2 optional 2.5" rear disk drive bays on 12 x 3.5" and 720ix models, hot-swap. Rear bays support SATA only.  Internal storage  M.2 SSD module  Internal storage  M.2 SSD module  Up to 2 SDHC flash cards via optional SD module, 8GB or 32GB each PCIe SSD adapter Optical drive None  None  None  Network interfaces  Security features  Supports ThinkServer management port, one AnyFabric slot for customized LOM. Discrete network options is also available via PCIe slots  Supports ThinkServer system Manager (TSM), optional TSM Premium.  UEFI. Onboard Aspeed AST2400 graphics/management processor, IPMI 2.0-compliant). Optional chassis intrusion switch  Systems  Microsoft Windows Server 2012 R2/2012/2008 R2. Windows Small Business Server 2011. Red Hat Enterprise Linux 6.5/6.6/7. SUSE Linux Enterprise Server 11.  Weight Dimensions  Hot-swap parts Noise and sold, sold salt, optional key for RAID 5.  RAID 0, 1, 10, 51, 50, 6, 60 with AnyRAID 120in alkey for RAID 5.  RAID 0, 1, 10, 51, 50, 6, 60 with AnyRAID 120in alkey for RAID 5.  Environmental specification  Weight Dimensions  Final 72 x 3.5" and 720ix models, and 720ix models, and 720ix models, and 720ix models			
RAÍD 0, 1, 10 with AnyRAID 110i. 6Gb/s SATA, optional key for RAID 5. RAID 0, 1, 10 with AnyRAID 510i, 6Gb/s SAS/SATA, optional key for RAID 5/50. RAID 0, 1, 10, 5, 50, 6, 60 with AnyRAID 720i/T20ix. 12Gb/s SAS/SATA. 720i needs cache for RAID 6/60 support. 720ix must have a cache. Optional cache for 720i/T20ix. 12G bread-only memory. 1GB/2GB/4GB flash with super capacitor. Flash options include CacheVault, CacheCade Pro, and FastPath Up to 6 (0-5) or 12 (0-11) 3.5" front hot-swap disk drive bays. Up to 2 optional 2.5" Disk drive bays  Disk drive bays bays bays bays bays bays bays bays	Memory protection	ECC, memory mirroring, lockstep, and memory sparing	
Disk drive bays  Internal storage  Disk drive bays  Disk drive bays  Internal storage  Disk drive bays  Disk drive bays on 12 x 3.5" front hot-swap disk drive bays. Up to 2 optional 2.5" rear disk drive bays supports the following hot-swap drives: 3.5" hard drive up to 6TB (SATA/SAS), 2.5" hard drive up to 6TB (SAT	AnyRAID support	RAÍD 0, 1, 10 with AnyRAID 110i. 6Gb/s SATA, optional key for RAID 5. RAID 0, 1, 10 with AnyRAID 510i, 6Gb/s SAS/SATA, optional key for RAID 5/50. RAID 0, 1, 10, 5, 50, 6, 60 with AnyRAID 720i/720ix. 12Gb/s SAS/SATA. 720i needs cache for RAID 6/60 support. 720ix must have a cache. Optional cache for 720i/720ix: 1GB read-only memory. 1GB/2GB/4GB flash with	Noise emissions  Environmental
Internal storage Supports the following hot-swap drives: 3.5" hard drive up to 6TB (SATA/SAS), 2.5" hard drive up to 1.8TB (SAS)/1TB (SAS)/1.2.5" SSD up to 800GB (SATA/SAS).  M.2 SSD module Up to 2 M.2 SSD drives via optional M.2 module on 12 x 3.5" and 720ix models, 80GB or 120GB each  SD module Up to 2 SDHC flash cards via optional SD module, 8GB or 32GB each  PCIe SSD adapter Supports 1.6TB or 3.2TB PCIe SSD adapter  Optical drive None  Tape drive bays None  Network interfaces One dedicated management port, one AnyFabric slot for customized LOM. Discrete network options is also available via PCIe slots  Security features Power-on and administrator password. Optional Trusted Platform Module (TCG 1.2-compliant). Optional chassis intrusion switch  Supports ThinkServer System Manager (TSM), optional TSM Premium.  UEFI. Onboard Aspeed AST2400 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC).  Control Panel LEDs shows the status of power, ID, network, system.  Supports ThinkServer management software: Diagnostics, Deployment Manager, Energy Manager, System Manager, Partner Pack for VMware vCenter and Microsoft System Center Operations Manager, Power Planner  Operating systems supported Microsoft Windows Server 2012 R2/2012/2008 R2. Windows Small Business  Server 2011. Red Hat Enterprise Linux 6.5/6.6/7. SUSE Linux Enterprise Server 11. VMware vSphere (ESXi) 5.1 P5/5.5 U2/6.0  4X70F28589 T 4X20F28577 Leg	Disk drive bays	Up to 6 (0-5) or 12 (0-11) 3.5" front hot-swap disk drive bays. Up to 2 optional 2.5" rear disk drive bays on 12 x 3.5" and 720ix models, hot-swap. Rear bays support	
M.2 SSD module    Dp to 2 M.2 SSD drives via optional M.2 module on 12 x 3.5" and 720ix models, 80GB or 120GB each   SD module	Internal storage	Supports the following hot-swap drives: 3.5" hard drive up to 6TB (SATA/SAS), 2.5"	
SD module  Up to 2 SDHC flash cards via optional SD module, 8GB or 32GB each  PCIe SSD adapter  Optical drive  None  None  None  Network interfaces  Security features  Security features  Systems  management  Control Panel LEDs shows the status of power, ID, network, system. Supports ThinkServer management software: Diagnostics, Deployment Manager, Energy Manager, System Manager, Partner Pack for VMware vCenter and Microsoft System Center Operations Manager, Power Planner  Operating systems  Supported  Microsoft Windows Server 2012 R2/2012/2008 R2. Windows Small Business Server 2011. Red Hat Enterprise Linux 6.56.6/7. SUSE Linux Enterprise Server 11. VMware vSphere (ESXi) 5.1 P5/5.5 U2/6.0  Supports ThinkServer with 9x5/NBD.  Departing systems Supported  Depart	M.2 SSD module	Up to 2 M.2 SSD drives via optional M.2 module on 12 x 3.5" and 720ix models,	
PCIe SSD adapter Optical drive None Tape drive bays None Network interfaces Security features Systems management management Control Panel LEDs shows the status of power, ID, network, system. Supports ThinkServer management software: Diagnostics, Deployment Manager, Energy Manager, System Manager, Power Planner Operating systems supported  Operating systems Suppo	SD module		
Optical drive None Tape drive bays None Network interfaces Network interfaces Security features Security features Systems management Control Panel LEDs shows the status of power, ID, network, system. Supports ThinkServer management software: Diagnostics, Deployment Manager, Energy Manager, System Manager, Power Planner  Operating systems supported  Operating sys	PCIe SSD adapter		
Tape drive bays  None  Network interfaces  Network interfaces  Security features  Security features  Supports ThinkServer System Manager (TSM), optional TSM Premium. UEFI. Onboard Aspeed AST2400 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC). Control Panel LEDs shows the status of power, ID, network, system. Supports ThinkServer management software: Diagnostics, Deployment Manager, Energy Manager, System Manager, Partner Pack for VMware vCenter and Microsoft System Center Operations Manager, Power Planner  Operating systems supported  Operating systems Supports  Operating device supports  Operating systems Supports  Operating			2
Network interfaces network options is also available via PCle slots  Security features  Power-on and administrator password. Optional Trusted Platform Module (TCG 1.2-compliant). Optional chassis intrusion switch  Supports ThinkServer System Manager (TSM), optional TSM Premium. UEFI. Onboard Aspeed AST2400 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC). Control Panel LEDs shows the status of power, ID, network, system. Supports ThinkServer management software: Diagnostics, Deployment Manager, Energy Manager, System Manager, Partner Pack for VMware vCenter and Microsoft System Center Operations Manager, Power Planner  Operating systems Server 2011. Red Hat Enterprise Linux 6.5/6.6/7. SUSE Linux Enterprise Server 11. VMware vSphere (ESXi) 5.1 P5/5.5 U2/6.0  Base warranty  Optional Trusted Platform Module (TCG 1.2-compliant). Up to eight half-le Slot 1 (riser card Slot 2 (riser card Slot 4 (onboard): Slot 4 (onboard): Slot 5 (riser card Slot 5 (riser card Slot 6 (riser card Slot 4 (onboard): Slot 8 (onboard): Slot 1-8 are x8 w Core Options for Slot 9 (onboard): Slot 8 (onboard): Slot		None	
Security features    Power-on and administrator password. Optional Trusted Platform Module (TCG 1.2-compliant). Optional chassis intrusion switch   Supports ThinkServer System Manager (TSM), optional TSM Premium. UEFI. Onboard Aspeed AST2400 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC). Control Panel LEDs shows the status of power, ID, network, system. Supports ThinkServer management software: Diagnostics, Deployment Manager, Energy Manager, System Manager, Partner Pack for VMware vCenter and Microsoft System Center Operations Manager, Power Planner   Operating systems supported   Microsoft Windows Server 2012 R2/2012/2008 R2. Windows Small Business Server 2011. Red Hat Enterprise Linux 6.5/6.6/7. SUSE Linux Enterprise Server 11. VMware vSphere (ESXi) 5.1 P5/5.5 U2/6.0   Slot 1 (riser card Slot 4 (onboard): Slot 5 (riser card Slot 6 (riser card Slot 4 (onboard): Slot 6 (riser card Slot 4 (onboard): Slot 5 (riser card Slot 6 (riser card Slot 4 (onboard): Slot 5 (riser card Slot 6 (riser card Slot 4 (onboard): Slot 6 (riser card Slot 4 (onboard): Slot 5 (riser card Slot 6 (riser card Slot 4 (onboard): Slot 5 (riser card Slot 4 (onboard): Slot 5 (riser card Slot 4 (onboard): Slot 5 (riser card Slot 4 (onboard): Slot 6 (riser card Slot 4 (onboard): Slot 5 (riser card Slot 4 (onboard)	, , , , , , , , , , , , , , , , , , ,		Expansion slots Up to eight half-le
Systems management  Systems management  Systems management  Systems management  Supports ThinkServer management software: Diagnostics, Deployment Manager, Energy Manager, System Manager, Partner Pack for VMware vCenter and Microsoft System Center Operations Manager, Power Planner  Operating systems supported  Microsoft Windows Server 2012 R2/2012/2008 R2. Windows Small Business Server 2011. Red Hat Enterprise Linux 6.5/6.6/7. SUSE Linux Enterprise Server 11. VMware vSphere (ESXi) 5.1 P5/5.5 U2/6.0  Base warranty  Slot 4 (onboard): Slot 5 (riser card: Slot 6 (riser card: Slot 7 (onboard): Note: Slot 1-8 are x8 w Core Options to 4X70F28589 Tr 4X70F28581 Tr 4X20F28577 Le  Slot 4 (onboard): Slot 5 (riser card: Slot 6 (riser card: Slot 7 (onboard): Slot 7 (onboard): Slot 7 (onboard): Slot 8 (onboard): Slot 7 (onboard): Slot 7 (onboard): Slot 7 (onboard): Slot 7 (onboard): Slot 8 (onboard): Slot 7 (onboard): Slot 7 (onboard): Slot 8 (onboard): Slot 7 (onboard): Slot 7 (onboard): Slot 8 (onboard): Note: Slot 1-8 are x8 w Core Options to 4X70F28589 Tr 4X70F28581 Tr	Security features	Power-on and administrator password. Optional Trusted Platform Module (TCG 1.2-compliant). Optional chassis intrusion switch	Slot 2 (riser card
Operating systems Server 2011. Red Hat Enterprise Linux 6.5/6.6/7. SUSE Linux Enterprise Server 11. 4X70F28589 Tr VMware vSphere (ESXi) 5.1 P5/5.5 U2/6.0 4XF0G45881 Tr 4X20F28577 Leg 4X20F2857 Leg 4X20F2	Systems management	Supports ThinkServer System Manager (TSM), optional TSM Premium. UEFI. Onboard Aspeed AST2400 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC). Control Panel LEDs shows the status of power, ID, network, system. Supports ThinkServer management software: Diagnostics, Deployment Manager, Energy Manager, System Manager, Partner Pack for VMware vCenter and Microsoft System Center Operations Manager, Power Planner	Slot 5 (riser card: Slot 6 (riser card: Slot 7 (onboard):
Base warranty 3-year limited onsite service with 9x5/NBD. 4X20F28577 Le		Server 2011. Red Hat Enterprise Linux 6.5/6.6/7. SUSE Linux Enterprise Server 11. VMware vSphere (ESXi) 5.1 P5/5.5 U2/6.0	4X70F28589 Th
	Base warranty		

Components	Specification								
Power supply	ac power supplies. 550 W, 1100 W, qualified, 750 W is 80 PLUS Platin is 200V - 240V, others are 110V - 21100W if the system line input is 10 x 3.5" model	W ac, 750 W ac, 1100 W ac, or 1600 W and 1600 W are 80 PLUS Platinum und or Titanium qualified. 750 W Titanium 240V. 1600 W will automatically operate in 00-127V. Up to 135W CPU on 550 W and 12							
Graphics	Onboard Aspeed AST2400 with 16 Maximum resolution: 1920x1200@	MB memory, one DisplayPort on rear. 60Hz							
Front ports	None								
Rear ports	One DisplayPort, two USB 3.0, one	e RJ-45 (dedicate mgmt), one serial (9-pin)							
Cooling	Six (5+1, dual processors) or four (	3+1, single processor), hot-swap							
Hot-swap parts	Disk drives, power supplies, and fa	ns							
Noise emissions	Operating: < 6.5 Bels, Idle: < 6 Bels	s (Maximum configuration)							
Environmental specification	Temperature - operating Temperature - non operating (no package) Temperature - non operating (with package) Altitude - operating Humidity - operating Humidity - storage (with package)	41 °F to 113 °F (5 °C to 45 °C) -10 °C to 60 °C -40 °C to 60 °C (Unpressurized): 0-10000ft (0-3048m) 8%~90%, non-condensing							
	Note: 45° C continuous operation configuration limitation: no 135W or 145W CPU/no GPU card/ redundant PSU/no FLFH card/no PCIe SSD adapter.								
Weight	/linimum configuration: 16 kg (35.3 lb), maximum: 32 kg (70.5 lb)								
Dimensions	Height: 87 mm (3.4 in), width: 482 i	mm (19 in), depth: 764 mm (30 in)							
	BOUL 0 7	F 6 4							



to eight half-length PCIe 3.0 x 16 slots depending on the riser cards installed:

lot 1 (riser card 1): PCle 3.0 x 16, half length, full height lot 2 (riser card 1): PCle 3.0 x 16, half length, full height lot 3 (riser card 1): PCle 3.0 x 16, half length, full height lot 3 (riser card 1): PCle 3.0 x 16, half length, full height

Specification

lot 4 (onboard): PCle 3.0 x 16, low-profile, half length, requires 2nd CPU lot 5 (riser card 2): PCle 3.0 x 16, half length, full height, requires 2nd riser card and 2nd CPU lot 6 (riser card 2): PCle 3.0 x 16, half length, full height, requires 2nd riser card and 2nd CPU

lot 7 (onboard): PCIe 3.0 x 16, low-profile, half length, requires 2nd CPU lot 8 (onboard): PCIe 3.0 x 16, low-profile, half length, requires 2nd CPU te: Slot 1-8 are x8 wired. Full height and full length PCIe x16 slots is optional on 2.5" models only.

### ore Options for ThinkServer RD650 (partial)

(70F28589 ThinkServer 8GB DDR4-2133MHz (1Rx4) RDIMM

(F0G45881 ThinkServer 2U x8/x8/x8 PCIe Riser Kit

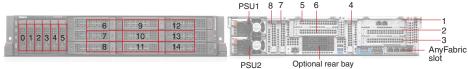
(20F28577 Lenovo ThinkServer Gen 5 1100W Platinum Hot Swap Power Supply (F0G45867 ThinkServer System Manager Premium (TSM Premium)

4X90F92980 ThinkServer DisplayPort to VGA Dongle

Tyrno					Disk		M.2/SD	PCIe SSD	Slots (HL/		Tono	Discrete		Chassis	Cuotom	Preloaded	Base	
Type- model	Processor	2nd CPU	Memory	AnyRAID	bays	Disk drives	module	adpr	(	Optical		ethernet		switch	mgmt	OS	wty	Power
70D4000CU	1xE5-2620 v3 6C/2.4GHz/ 15MB/85W/1866MHz	4XG0F28819	1x8GB 2133MHz RDIMM	720ix +1GB RAM	6+9 HS	Open	No	No	3/0	None	None	No	TPM	No	TSM	No	3-year	1100Wx1 Platinum
70D4000DU	1xE5-2640 v3 8C/2.6GHz/ 20MB/90W/1866MHz	4XG0F28817	1x8GB 2133MHz RDIMM	720ix +1GB RAM	6+9 HS	Open	No	No	3/0	None	None	No	TPM	No	TSM	No	3-year	1100Wx1 Platinum
70D4000EU	1xE5-2650 v3 10C/2.3GHz/ 25MB/105W/2133MHz	4XG0F28816	1x8GB 2133MHz RDIMM	720ix +1GB RAM	6+9 HS	Open	No	No	3/0	None	None	No	TPM	No	TSM	No	3-year	1100Wx1 Platinum
70D4000FU	1xE5-2690 v3 12C/2.6GHz/ 30MB/135W/2133MHz	4XG0F28811	1x8GB 2133MHz RDIMM	720ix +1GB RAM	6+9 HS	Open	No	No	3/0	None	None	No	TPM	No	TSM	No	3-VAAr	1100Wx1 Platinum

Components	Specification	1
Form factor	2U rack	11
	Up to two <b>145W Intel Xeon E5-2600 v3</b> family processors with 18 cores up to 2.3GHz, 16 cores up to 2.3GHz, 14 cores up to 2.6GHz, 12 cores up to 2.6GHz,	
Processor	10 cores up to 2.6GHz, 8 cores up to 3.2GHz, 6 cores up to 3.4GHz, 4 cores up to 3.5GHz. Two QPI link up to 9.6 GT/s.	╟
	Up to 2133MHz memory speed. Up to 45MB cache	
Chipset	Intel C612 Platform Controller Hub (PCH)	11
Memory DIMMs	24 DIMM sockets (12 DIMMs per processor), 8-channel capable (4-channel per processor). RDIMM and LRDIMM (cannot be intermixed), DDR4, up to 2133MHz	
Memory capacity	384GB (RDIMM, 16GB x 24)/768GB (LRDIMM, 32GB x 24)	][
Memory protection	ECC, memory mirroring, lockstep, and memory sparing	
AnyRAID support	RAID 0, 1, 10, 5, 50, 6, 60 with AnyRAID 720ix, 12Gb/s SAS/SATA. Cahce is needed. Optional cache: 1GB read-only memory. 1GB/2GB/4GB flash with super capacitor. Flash options include CacheVault, CacheCade Pro, and FastPath	
Disk drive bays with AnyBay support	Up to 6 (0-5) 2.5" and 12 (6-14) 3.5" hot-swap disk drive bays. Up to 2 x 2.5" rear hot-swap disk drive bays. Rear bay supports SATA drives only. 4 of 6 front 2.5" bay supports optional 2.5" PCIe SSD, easy-swap, optional AnyBay Enablement kit is needed (AnyBay kit needs 2 PCIe slots)	
Internal storage	Supports the following hot-swap drives: 3.5" hard drive up to 6TB (SATA/SAS) each, 2.5" hard drive up to 1.8TB (SAS)/1TB (SATA), 2.5" SSD up to 800GB (SATA/SAS). Aslo supports easy-swap 2.5" PCIe SSD up to 1.6TB	
M.2 SSD module	Up to 2 M.2 SSD drives via optional M.2 module, 80GB or 120GB each	1
SD module	Up to 2 SDHC flash cards via optional SD module, 8GB or 32GB each	1
	Supports 1.6TB or 3.2TB PCIe SSD adapter	
- p	None	
Tape drive bays	None	
Network interfaces	One dedicated management port, one AnyFabric slot for customized LOM. Discrete network options is also available via PCIe slots	
Security features	Power-on and administrator password. Optional Trusted Platform Module (TCG 1.2-compliant). Optional chassis intrusion switch	
Systems management	Supports ThinkServer System Manager (TSM), optional TSM Premium.  UEFI. Onboard Aspeed AST2400 graphics/management processor,  IPMI 2.0-compliant baseboard management controller (BMC).  Control Panel LEDs shows the status of power, ID, network, system.  Supports ThinkServer management software: Diagnostics, Deployment Manager,  Energy Manager, System Manager, Partner Pack for VMware vCenter and Microsoft  System Center Operations Manager, Power Planner	
Operating systems supported	Microsoft Windows Server 2012 R2/2012/2008 R2. Windows Small Business Server 2011. Red Hat Enterprise Linux 6.5/6.6/7. SUSE Linux Enterprise Server 11. VMware vSphere (ESXi) 5.1 P5/5.5 U2/6.0	
Base warranty	3-year limited onsite service with 9x5/NBD. Some parts are Customer Replaceable Units	2

Components	Specification		
Power supply	Up to two redundant hot-swap 750 supplies. 550 W, 1100 W, and 1600 W is 80 PLUS Platinum or Titanium others are 110V - 240V.	W are 80 PLUS Platinum qualified	, 750
Graphics	Onboard Aspeed AST2400 with 16 DisplayPort on rear. Maximum reso	MB memory, one DisplayPort on fro olution: 1920x1200@60Hz	ont, one
Front ports	Two USB 2.0, one DisplayPort.		
Rear ports	One DisplayPort, two USB 3.0, one	RJ-45 (dedicate mgmt), one serial	l (9-pin)
Cooling	8 (7+1, dual processors) or 6 (5+1,	single processor), hot-swap	
Hot-swap parts	Disk drives, power supplies, and fa	ns	
Noise emissions	Operating: < 6.5 Bels, Idle: < 6 Bels	(Maximum configuration)	
Environmental specification	Temperature - operating Temperature - non operating (no package) Temperature - non operating (with package) Altitude - operating Humidity - operating Humidity - storage (with package)	41 °F to 113 °F (5 °C to 45 °C) -10 °C to 60 °C -40 °C to 60 °C (Unpressurized): 0-10000ft (0-3048m) 8%~90%, non-condensing 8%~90%, non-condensing	
	Note: 45 ° C continuous operation configuration redundant PSU/no FLFH card/no PCle SSD ad	n limitation: no 135W or 145W CPU/no GPU ca dapter.	rd/
Weight	Minimum configuration: 16 kg (35.3	lb), maximum: 32 kg (70.5 lb)	
Dimensions	Height: 87 mm (3.4 in), width: 482 r	mm (19 in), depth: 764 mm (30 in)	



**Expansion slots**Up to eight half-length PCle 3.0 x 16 slots depending on the riser cards installed:

Slot 1 (riser card 1): PCle 3.0 x 16, half length, full height Slot 2 (riser card 1): PCle 3.0 x 16, half length, full height Slot 3 (riser card 1): PCle 3.0 x 16, half length, full height Slot 3 (riser card 1): PCle 3.0 x 16, half length, full height

Slot 4 (onboard): PCle 3.0 x 16, low-profile, half length, requires 2nd CPU
Slot 5 (riser card 2): PCle 3.0 x 16, half length, full height, requires 2nd riser card and 2nd CPU
Slot 6 (riser card 2): PCle 3.0 x 16, half length, full height, requires 2nd riser card and 2nd CPU

Slot 7 (onboard): PCIe 3.0 x 16, low-profile, half length, requires 2nd CPU Slot 8 (onboard): PCIe 3.0 x 16, low-profile, half length, requires 2nd CPU

Note: Slot 1-8 are x8 wired. Full height and full length PCIe x16 slots is optional on 2.5" models only.

### Core Options for ThinkServer RD650 (partial)

4X70F28589 ThinkServer 8GB DDR4-2133MHz (1Rx4) RDIMM

4XF0G45881 ThinkServer 2U x8/x8/x8 PCle Riser Kit

4X20F28577 Lenovo ThinkServer Gen 5 1100W Platinum Hot Swap Power Supply

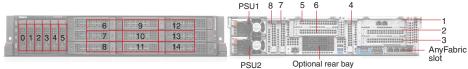
4XF0G45867 ThinkServer System Manager Premium (TSM Premium)

4X90F92980 ThinkServer DisplayPort to VGA Dongle

Type-					Disk		M.2/SD	PCIe SSD	Slots (HL/		Таре	Discrete		Chassis intrusion	System	Preloaded	Base	
model	Processor	2nd CPU	Memory	AnyRAID	bays	Disk drives	module	adpr	FHFL)	Optical	drive	ethernet	TPM	switch	mgmt	os	wty	Power
70D4001RU	1xE5-2603 v3 6C/1.6GHz/ 15MB/85W/1600MHz	4XG0F28821	1x8GB 2133MHz RDIMM	720ix +1GB RAM	6+9 HS	Open	No	No	0/0	None	None	No	TPM	No	TSM	No	3-year	750Wx1 Platinum

Components	Specification	C
Form factor	2U rack	Г
	Up to two 145W Intel Xeon E5-2600 v3 family processors with 18 cores up to	_
_	2.3GHz, 16 cores up to 2.3GHz, 14 cores up to 2.6GHz, 12 cores up to 2.6GHz,	F
Processor	10 cores up to 2.6GHz, 8 cores up to 3.2GHz, 6 cores up to 3.4GHz,	
	4 cores up to 3.5GHz. Two QPI link up to 9.6 GT/s. Up to 2133MHz memory speed. Up to 45MB cache	H
Chipset	Intel C612 Platform Controller Hub (PCH)	C
•	24 DIMM sockets (12 DIMMs per processor), 8-channel capable (4-channel per	F
Memory DIMMs	processor). RDIMM and LRDIMM (cannot be intermixed), DDR4, up to 2133MHz	F
Memory capacity	384GB (RDIMM, 16GB x 24)/768GB (LRDIMM, 32GB x 24)	C
Memory protection	ECC, memory mirroring, lockstep, and memory sparing	F
Any DAID ournort	RAID 0, 1, 10, 5, 50, 6, 60 with AnyRAID 720ix, 12Gb/s SAS/SATA.	Ν
AnyRAID support	Cahce is needed. Optional cache: 1GB read-only memory. 1GB/2GB/4GB flash with	
	super capacitor. Flash options include CacheVault, CacheCade Pro, and FastPath Up to 6 (0-5) 2.5" and 12 (6-14) 3.5" hot-swap disk drive bays. Up to 2 x 2.5" rear	
Disk drive bays	hot-swap disk drive bays. Rear bay supports SATA drives only.	E
with AnyBay	4 of 6 front 2.5" bay supports optional 2.5" PCIe SSD, easy-swap, optional AnyBay	s
support	Enablement kit is needed (AnyBay kit needs 2 PCle slots)	
	Supports the following hot-swap drives: 3.5" hard drive up to 6TB (SATA/SAS) each,	
Internal storage	2.5" hard drive up to 1.8TB (SAS)/1TB (SATA), 2.5" SSD up to 800GB (SATA/SAS).	ν
M O OOD adula	Aslo supports easy-swap 2.5" PCIe SSD up to 1.6TB	Ċ
M.2 SSD module	Up to 2 M.2 SSD drives via optional M.2 module, 80GB or 120GB each	Ŀ
SD module	Up to 2 SDHC flash cards via optional SD module, 8GB or 32GB each	
	Supports 1.6TB or 3.2TB PCIe SSD adapter	
Optical drive	None	- 1
Tape drive bays	None	1
Network interfaces	One dedicated management port, one AnyFabric slot for customized LOM. Discrete network options is also available via PCIe slots	
Security features	Power-on and administrator password. Optional Trusted Platform Module (TCG	Е
Coounty locatoroo	1.2-compliant). Optional chassis intrusion switch	į
	Supports ThinkServer System Manager (TSM), optional TSM Premium.	S
	UEFI. Onboard Aspeed AST2400 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC).	Š
Systems	Control Panel LEDs shows the status of power, ID, network, system.	S
management	Supports ThinkServer management software: Diagnostics, Deployment Manager,	S
	Energy Manager, System Manager, Partner Pack for VMware vCenter and Microsoft	S
	System Center Operations Manager, Power Planner	S
Oneveting evet-	Microsoft Windows Server 2012 R2/2012/2008 R2. Windows Small Business	S
Operating systems	Server 2011. Red Hat Enterprise Linux 6.5/6.6/7. SUSE Linux Enterprise Server 11.	S
supported	VMware vSphere (ESXi) 5.1 P5/5.5 U2/6.0	٨
Base warranty	3-year limited onsite service with 9x5/NBD.	C
Dago warranty	Some parts are Customer Replaceable Units	4

Components	Specification
Power supply	Up to two redundant hot-swap 750 W ac or 1100 W ac or 1600 W ac power supplies. 550 W, 1100 W, and 1600 W are 80 PLUS Platinum qualified, 750 W is 80 PLUS Platinum or Titanium qualified. 750 W Titanium is 200V - 240V, others are 110V - 240V. 1600 W will automatically operate in 1100W if the system line input is 100-127V.
Graphics	Onboard Aspeed AST2400 with 16MB memory, one DisplayPort on rear.  Maximum resolution: 1920x1200@60Hz
Front ports	None
Rear ports	One DisplayPort, two USB 3.0, one RJ-45 (dedicate mgmt), one serial (9-pin)
Cooling	Six (5+1, dual processors) or four (3+1, single processor), hot-swap
Hot-swap parts	Disk drives, power supplies, and fans
Noise emissions	Operating: < 6.5 Bels, Idle: < 6 Bels (Maximum configuration)
Environmental specification	Temperature - operating Temperature - non operating (no package) Temperature - non operating (with package) Altitude - operating Humidity - operating Humidity - storage (with package)  41 ° F to 113 ° F (5 ° C to 45 ° C) -10 ° C to 60 ° C (Unpressurized): 0-10000ft (0-3048m) 8%~90%, non-condensing Humidity - storage (with package)
Weight	Note: 45 ° C continuous operation configuration limitation: no 135W or 145W CPU/no GPU card/ redundant PSU/no FLFH card/no PCIe SSD adapter.  Minimum configuration: 16 kg (35.3 lb), maximum: 32 kg (70.5 lb)
Dimensions	Height: 87 mm (3.4 in), width: 482 mm (19 in), depth: 764 mm (30 in)



Jp to eight half-length PCIe 3.0 x 16 slots depending on the riser cards installed:

Slot 1 (riser card 1): PCle 3.0 x 16, half length, full height Slot 2 (riser card 1): PCle 3.0 x 16, half length, full height Slot 3 (riser card 1): PCle 3.0 x 16, half length, full height

Slot 4 (onboard): PCle 3.0 x 16, low-profile, half length, requires 2nd CPU
Slot 5 (riser card 2): PCle 3.0 x 16, half length, full height, requires 2nd riser card and 2nd CPU
Slot 6 (riser card 2): PCle 3.0 x 16, half length, full height, requires 2nd riser card and 2nd CPU

Slot 7 (onboard): PCIe 3.0 x 16, low-profile, half length, requires 2nd CPU Slot 8 (onboard): PCIe 3.0 x 16, low-profile, half length, requires 2nd CPU

Note: Slot 1-8 are x8 wired. Full height and full length PCIe x16 slots is optional on 2.5" models only.

### Core Options for ThinkServer RD650 (partial)

X70F28589 ThinkServer 8GB DDR4-2133MHz (1Rx4) RDIMM

4XF0G45881 ThinkServer 2U x8/x8/x8 PCle Riser Kit

4X20F28577 Lenovo ThinkServer Gen 5 1100W Platinum Hot Swap Power Supply

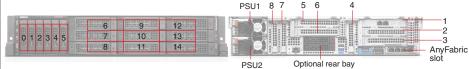
4XF0G45867 ThinkServer System Manager Premium (TSM Premium)

4X90F92980 ThinkServer DisplayPort to VGA Dongle

	Type-					Disk		M.2/SD	PCIe SSD	Таре	Slots (HL/				Chassis intrusion	System	Preloaded	
	model	Processor	2nd CPU	Memory	AnyRAID	Bays	Disk drives	module	adpr	drive	FHFL)	Optical	AnyFabric	TPM	switch	mgmt	os	Power
Ì	//////////////////////////////////////	1xE5-2650 v3 10C/2.3GHz/ 25MB/105W/2133MHz	4XG0F28816	1x8GB 2133MHz RDIMM	720ix+1GB RAM	6+9 HS	Open	No	No	None	3/0	None	No	TPM	No	TSM	No	750Wx1 Platinum

Components	Specification	C
Form factor	2U rack	ıſ
	Up to two 145W Intel Xeon E5-2600 v3 family processors with 18 cores up to	Ш
	2.3GHz, 16 cores up to 2.3GHz, 14 cores up to 2.6GHz, 12 cores up to 2.6GHz,	F
Processor	10 cores up to 2.6GHz, 8 cores up to 3.2GHz, 6 cores up to 3.4GHz,	Ш
	4 cores up to 3.5GHz. Two QPI link up to 9.6 GT/s.	ıL
	Up to 2133MHz memory speed. Up to 45MB cache	llo
Chipset	Intel C612 Platform Controller Hub (PCH)	H
Memory DIMMs	24 DIMM sockets (12 DIMMs per processor), 8-channel capable (4-channel per processor). RDIMM and LRDIMM (cannot be intermixed), DDR4, up to 2133MHz	F
Memory capacity	384GB (RDIMM, 16GB x 24)/768GB (LRDIMM, 32GB x 24)	
Memory protection	ECC, memory mirroring, lockstep, and memory sparing	F
	RAID 0, 1, 10, 5, 50, 6, 60 with AnyRAID 720ix, 12Gb/s SAS/SATA.	N
AnyRAID support	Cahce is needed. Optional cache: 1GB read-only memory. 1GB/2GB/4GB flash with	ıΓ
	super capacitor. Flash options include CacheVault, CacheCade Pro, and FastPath	Ш
Disk drive bays	Up to 6 (0-5) 2.5" and 12 (6-14) 3.5" hot-swap disk drive bays. Up to 2 x 2.5" rear	lle
with AnyBay	hot-swap disk drive bays. Rear bay supports SATA drives only.	5
support	4 of 6 front 2.5" bay supports optional 2.5" PCIe SSD, easy-swap, optional AnyBay	٦
• • • • • • • • • • • • • • • • • • • •	Enablement kit is needed (AnyBay kit needs 2 PCIe slots) Supports the following hot-swap drives: 3.5" hard drive up to 6TB (SATA/SAS) each,	Ш
Internal storage	2.5" hard drive up to 1.8TB (SAS)/1TB (SATA), 2.5" SSD up to 800GB (SATA/SAS).	ıL
Internal storage	Aslo supports easy-swap 2.5" PCIe SSD up to 1.6TB	١
M.2 SSD module	Up to 2 M.2 SSD drives via optional M.2 module, 80GB or 120GB each	
SD module	Up to 2 SDHC flash cards via optional SD module, 8GB or 32GB each	
	Supports 1.6TB or 3.2TB PCIe SSD adapter	
Optical drive	None	П
Tape drive bays	None	П
<u> </u>	One dedicated management port, one AnyFabric slot for customized LOM. Discrete	H
Network interfaces	network options is also available via PCIe slots	ł
Security features	Power-on and administrator password. Optional Trusted Platform Module (TCG	E
occurry leatures	1.2-compliant). Optional chassis intrusion switch	į
	Supports ThinkServer System Manager (TSM), optional TSM Premium.	Š
	UEFI. Onboard Aspeed AST2400 graphics/management processor,	5
Systems	IPMI 2.0-compliant baseboard management controller (BMC).	S
management	Control Panel LEDs shows the status of power, ID, network, system.	S
	Supports ThinkServer management software: Diagnostics, Deployment Manager,	_
	Energy Manager, System Manager, Partner Pack for VMware vCenter and Microsoft	Š
	System Center Operations Manager, Power Planner	Š
Operating systems	Microsoft Windows Server 2012 R2/2012/2008 R2. Windows Small Business	Š
supported	Server 2011. Red Hat Enterprise Linux 6.5/6.6/7. SUSE Linux Enterprise Server 11.	١
	VMware vSphere (ESXi) 5.1 P5/5.5 U2/6.0	c
Base warranty	3-year limited onsite service with 9x5/NBD. Some parts are Customer Replaceable Units	
	Some parts are Gustomer neplaceable offics	4

Components	Specification							
Power supply	supplies. 550 W, 1100 W, and 1600 W is 80 PLUS Platinum or Titanium	W ac or 1100 W ac or 1600 W ac power W are 80 PLUS Platinum qualified, 750 qualified. 750 W Titanium is 200V - 240V, I automatically operate in 1100W if the						
	Onboard Aspeed AST2400 with 16 Maximum resolution: 1920x1200@6	MB memory, one DisplayPort on rear. 60Hz						
Front ports	None							
Rear ports	One DisplayPort, two USB 3.0, one	RJ-45 (dedicate mgmt), one serial (9-pin)						
Cooling	Six (5+1, dual processors) or four (	3+1, single processor), hot-swap						
Hot-swap parts	Disk drives, power supplies, and far	ns						
Noise emissions	Operating: < 6.5 Bels, Idle: < 6 Bels	(Maximum configuration)						
Environmental specification	Temperature - operating Temperature - non operating (no package) Temperature - non operating (with package) Altitude - operating Humidity - operating Humidity - storage (with package)	41 °F to 113 °F (5 °C to 45 °C) -10 °C to 60 °C -40 °C to 60 °C (Unpressurized): 0-10000ft (0-3048m) 8%~90%, non-condensing 8%~90%, non-condensing						
	Note: 45 ° C continuous operation configuration redundant PSU/no FLFH card/no PCIe SSD ad	limitation: no 135W or 145W CPU/no GPU card/ lapter.						
Weight	Minimum configuration: 16 kg (35.3 lb), maximum: 32 kg (70.5 lb)							
Dimensions	Height: 87 mm (3.4 in), width: 482 n	nm (19 in), depth: 764 mm (30 in)						



Jp to eight half-length PCle 3.0 x 16 slots depending on the riser cards installed:

Slot 1 (riser card 1): PCle 3.0 x 16, half length, full height Slot 2 (riser card 1): PCle 3.0 x 16, half length, full height Slot 3 (riser card 1): PCle 3.0 x 16, half length, full height

Slot 4 (onboard): PCle 3.0 x 16, low-profile, half length, requires 2nd CPU
Slot 5 (riser card 2): PCle 3.0 x 16, half length, full height, requires 2nd riser card and 2nd CPU
Slot 6 (riser card 2): PCle 3.0 x 16, half length, full height, requires 2nd riser card and 2nd CPU

Slot 7 (onboard): PCIe 3.0 x 16, low-profile, half length, requires 2nd CPU Slot 8 (onboard): PCIe 3.0 x 16, low-profile, half length, requires 2nd CPU

Note: Slot 1-8 are x8 wired. Full height and full length PCIe x16 slots is optional on 2.5" models only.

### Core Options for ThinkServer RD650 (partial)

4X70F28589 ThinkServer 8GB DDR4-2133MHz (1Rx4) RDIMM

4XF0G45881 ThinkServer 2U x8/x8/x8 PCle Riser Kit

4X20F28577 Lenovo ThinkServer Gen 5 1100W Platinum Hot Swap Power Supply

4XF0G45867 ThinkServer System Manager Premium (TSM Premium)

4X90F92980 ThinkServer DisplayPort to VGA Dongle

### ThinkServer RD650 with 2.5" Disk Bay - TopSeller - 70DR (September 2014)

_					I			PCle	Slots					Chassis			_	
Type-	_				Disk	<b>-</b>	M.2/SD	SSD	(HL/			Discrete			- <b>,</b>	Preloaded		_
model	Processor	2nd CPU	Memory	AnyRAID	bays	Disk drives	module	adpr	FHFL)	Optical	arive	ethernet	IPM	switch	mgmt	os	wty	Power
70DR000QUX	1xE5-2609 v3 6C/1.9GHz/ 15MB/85W/1600MHz	4XG0F28820	1x8GB 2133MHz RDIMM	510i	8x2.5" HS	Open	No	No	3/0	DVD±RW	No	No	TPM	No	TSM	No	3-year	1100Wx1 Platinum
70DR000RUX	1xE5-2620 v3 6C/2.4GHz/ 15MB/85W/1866MHz	4XG0F28819	1x8GB 2133MHz RDIMM	510i	8x2.5" HS	Open	No	No	3/0	DVD±RW	No	No	TPM	No	TSM	No	3-year	1100Wx1 Platinum
70DR000SUX	1xE5-2640 v3 8C/2.6GHz/ 20MB/90W/1866MHz	4XG0F28817	1x8GB 2133MHz RDIMM	510i	8x2.5" HS	Open	No	No	3/0	DVD±RW	No	No	TPM	No	TSM	No	3-year	1100Wx1 Platinum
70DR000TUX	1xE5-2650 v3 10C/2.3GHz/ 25MB/105W/2133MHz	4XG0F28816	1x8GB 2133MHz RDIMM	510i	8x2.5" HS	Open	No	No	3/0	DVD±RW	No	No	TPM	No	TSM	No	3-year	1100Wx1 Platinum

Components	Specification	
Form factor	2U rack	1
	Up to two 145W Intel Xeon E5-2600 v3 family processors with 18 cores up to	11
	2.3GHz, 16 cores up to 2.3GHz, 14 cores up to 2.6GHz, 12 cores up to 2.6GHz,	$\parallel \parallel_{\perp}$
Processor	10 cores up to 2.6GHz, 8 cores up to 3.2GHz, 6 cores up to 3.4GHz,	F
	4 cores up to 3.5GHz. Two QPI link up to 9.6 GT/s.	Ш
	Up to 2133MHz memory speed. Up to 45MB cache	Ш
Chipset	Intel C612 Platform Controller Hub (PCH)	1
Memory DIMMs	24 DIMM sockets (12 DIMMs per processor), 8-channel capable (4-channel per	
INICITIOTY DIIVIIVIS	processor). RDIMM and LRDIMM (cannot be intermixed), DDR4, up to 2133MHz	11.
Memory capacity	384GB (RDIMM, 16GB x 24)/768GB (LRDIMM, 32GB x 24)	F
Memory protection	ECC, memory mirroring, lockstep, and memory sparing	F
	Supports AnyRAID 510i and 720i on 8 x 2.5" model, 720ix on 8/16/24 x 2.5" model.	110
	RAID 0, 1, 10 with AnyRAID 510i, 6Gb/s SAS/SATA, optional key for RAID 5/50.	F
	RAID 0, 1, 10, 5, 50, 6, 60 with AnyRAID 720i/720ix. 12Gb/s SAS/SATA. 720i needs	I
AnyRAID support	cache for RAID 6/60 support. 720ix must have a cache.	
	Optional cache for 720i/720ix: 1GB read-only memory. 1GB/2GB/4GB flash with	Ш
	super capacitor. Flash options include CacheVault, CacheCade Pro, and FastPath.	$\parallel$
	Also supports AnyRAID 110i on no front bay model, RAID 0 or 1	
	Up to 8 (0-7), 16 (0-15) or 24 (0-23) 2.5" front hot-swap disk drive bays. Up to 2	8
Disk drive bays	optional 2.5" rear disk drive bays on 720ix models, hot-swap. Rear bays support	Ш
DISK UTIVE Days	SATA only. On 24 x 2.5" models, 4 of 24 front 2.5" bay supports PCIe SSD, easy-	Ш
	swap, optional AnyBay Enablement kit is needed (AnyBay kit needs 2 PCIe slots)	J١
	Supports the following hot-swap drives: 2.5" hard drive up to 1.8TB (SAS)/1TB	1
Internal storage	(SATA), 2.5" SSD up to 800GB (SATA/SAS).	16
	Aslo supports easy-swap 2.5" PCle SSD up to 1.6TB each	4
M.2 SSD module	Up to 2 M.2 SSD drives via optional M.2 module, no front bay with 110i or 8/16/24 x	-
	2.5" model with 720ix only, 80GB or 120GB each	_
SD module	Up to 2 SDHC flash cards via optional SD module, 8GB or 32GB each	_
PCIe SSD adapter	Supports 1.6TB or 3.2TB PCIe SSD adapter	
Optical drive	Optional one Ultraslim optical drive on 8/16 x 2.5" model, DVD-ROM or DVD±RW	۱_
	Supports up to one LTO-6 internal SAS tape drive on 8 x 2.5" and 720ix model.	Ę
Tape drive bays	Note: Tape drive, rear disk drive, and M.2 SSD can not be supported simultaneously, only one device can be	L
	selected per system.	d
Network interfaces	One dedicated management port, one AnyFabric slot for customized LOM. Discrete	3
	network options is also available via PCIe slots	5
Security features	Power-on and administrator password. Optional Trusted Platform Module (TCG	S
-	1.2-compliant). Optional chassis intrusion switch Supports ThinkServer System Manager (TSM), optional TSM Premium.	Š
	UEFI. Onboard Aspeed AST2400 graphics/management processor,	S
	IPMI 2.0-compliant baseboard management controller (BMC).	S
Systems	Control Panel LEDs shows the status of power, ID, network, system.	S
management	Supports ThinkServer management software: Diagnostics, Deployment Manager,	S
	Energy Manager, System Manager, Partner Pack for VMware vCenter and Microsoft	
	System Center Operations Manager, Power Planner	1
	Microsoft Windows Server 2012 R2/2012/2008 R2. Windows Small Business	\ 'n
Operating systems	Server 2011. Red Hat Enterprise Linux 6.5/6.6/7. SUSE Linux Enterprise Server 11.	
supported	VMware vSphere (ESXi) 5.1 P5/5.5 U2/6.0	C
_	3-year limited onsite service with 9x5/NBD.	4
Base warranty	Some parts are Customer Replaceable Units	4
1	partie and describer representation of the	4 ٰ

	Components	Specification	
	Power supply	ac power supplies. 550 W, 1100 W, qualified, 750 W is 80 PLUS Platinu is 200V - 240V, others are 110V - 2: 1100W if the system line input is 10 or 135W CPU with 16 DIMMs on 55 supported on 24 x 2.5" model	W ac, 750 W ac, 1100 W ac, or 1600 W and 1600 W are 80 PLUS Platinum under the result of the result
	Graphics	Onboard Aspeed AST2400 with 16l DisplayPort on rear. Maximum resolution	MB memory, one DisplayPort on front, one lution: 1920x1200@60Hz
1	Front ports	Two USB 2.0, one DisplayPort	
1	Rear ports	One DisplayPort, two USB 3.0, one	RJ-45 (dedicate mgmt), one serial (9-pin)
1	Cooling	Six (5+1, dual processors) or four (3	3+1, single processor), hot-swap
	Hot-swap parts	Disk drives, power supplies, and far	าร
1	Noise emissions	Operating: < 6.5 Bels, Idle: < 6 Bels	
	Environmental specification	Temperature - operating Temperature - non operating (no package) Temperature - non operating (with package) Altitude - operating Humidity - operating Humidity - storage (with package)	41 °F to 113 °F (5 °C to 45 °C) -10 °C to 60 °C -40 °C to 60 °C (Unpressurized): 0-10000ft (0-3048m) 8%-90%, non-condensing 8%-90%, non-condensing
		redundant PSU/no FLFH card/no PCIe SSD ao	limitation: no 135W or 145W CPU/no GPU card/ lapter.
+	Weight	Minimum configuration: 16 kg (35.3	lb), maximum: 32 kg (70.5 lb)
1	Dimensions	Height: 87 mm (3.4 in), width: 482 n	nm (19 in), depth: 764 mm (30 in)
	·	PSU1	8 7 5 6 4
4			

### **Expansion slots**

Up to eight half-length PCIe 3.0 slots, or up to six PCIe 3.0 slots with two full size PCIe 3.0 x16 slots,

PSU<sub>2</sub>

Optional rear bay

depending on the riser cards and processors installed: Slot 1 (riser card 1): PCle 3.0 x 16, half length, full height Slot 2 (riser card 1): PCle 3.0 x 16, half length, full height Slot 3 (riser card 1): PCle 3.0 x 16, half length, full height

Specification

Slot 4 (onboard): PCIe 3.0 x 16, low-profile, half length, requires 2nd CPU Slot 5 (riser card 2): PCIe 3.0 x 16, half length, full height, requires 2nd riser card and 2nd CPU Slot 6 (riser card 2): PCle 3.0 x 16, half length, full height, requires 2nd riser card and 2nd CPU

Slot 7 (onboard): PCIe 3.0 x 16, low-profile, half length, requires 2nd CPU Slot 8 (onboard): PCIe 3.0 x 16, low-profile, half length, requires 2nd CPU

Slots 1 and 2 can be replaced with one PCIe 3.0 x16 slot, double wide, full length, full height, Slots 5 and 6 can be replaced with one PCIe 3.0 x16 slot, double wide, full length, full height.

Note: 1. Slot 1-8 are x8 wired. 2. One full size PCle 3.0 x16 slot model needs 1100 W or 1600 W PSU, two full size PCle 3.0 x16 slots

model needs 1600 W PSU. 3. Full size PCIe x16 slot is not available when tape drive is used.

### Core Options for ThinkServer RD650 (partial)

4X70F28589 ThinkServer 8GB DDR4-2133MHz (1Rx4) RDIMM

4X20F28577 Lenovo ThinkServer Gen 5 1100W Platinum Hot Swap Power Supply 4XF0G45867 ThinkServer System Manager Premium (TSM Premium)

4X90F92980 ThinkServer DisplayPort to VGA Dongle

For a list of all supported options, Please see *ThinkServer RD650 Options* sheet.

AnyFabric

Type- model	Processor	2nd CPU	Memory	AnyRAID	Disk bays	Disk drives	M.2/SD module	PCIe SSD adpr	Slots (HL/ FHFL)	Optical		Discrete ethernet			System mgmt	Preloaded OS	Base wty	Power
70DR002KUX	1xE5-2630 v3 8C/2.4GHz/ 20MB/85W/1866MHz	4XG0F28818	1x8GB 2133MHz RDIMM	510i	8x2.5" HS	Open	No	No	3/0	No	No	No	TPM	No	TSM	No	3-year	1100Wx1 Platinum
70DR002MUX	1xE5-2603 v3 6C/1.6GHz/ 15MB/85W/1600MHz	4XG0F28821	1x8GB 2133MHz RDIMM	510i	8x2.5" HS	Open	No	No	3/0	No	No	No	TPM	No	TSM	No	3-year	750Wx1 Platinum

Components	Specification	Components
Form factor	2U rack	•
	Up to two 145W Intel Xeon E5-2600 v3 family processors with 18 cores up to	
	2.3GHz, 16 cores up to 2.3GHz, 14 cores up to 2.6GHz, 12 cores up to 2.6GHz,	
Processor	10 cores up to 2.6GHz, 8 cores up to 3.2GHz, 6 cores up to 3.4GHz,	Power supply
	4 cores up to 3.5GHz. Two QPI link up to 9.6 GT/s.	
	Up to 2133MHz memory speed. Up to 45MB cache	
Chipset	Intel C612 Platform Controller Hub (PCH)	
Mamon, DIMMa	24 DIMM sockets (12 DIMMs per processor), 8-channel capable (4-channel per	Graphics
Memory DIMMs	processor). RDIMM and LRDIMM (cannot be intermixed), DDR4, up to 2133MHz	<u> </u>
Memory capacity	384GB (RDIMM, 16GB x 24)/768GB (LRDIMM, 32GB x 24)	Front ports
Memory protection	ECC, memory mirroring, lockstep, and memory sparing	Rear ports
7.	Supports AnyRAID 510i and 720i on 8 x 2.5" model, 720ix on 8/16/24 x 2.5" model.	Cooling
	RAID 0, 1, 10 with AnyRAID 510i, 6Gb/s SAS/SATA, optional key for RAID 5/50.	Hot-swap parts
	RAID 0, 1, 10, 5, 50, 6, 60 with AnyRAID 720i/720ix. 12Gb/s SAS/SATA. 720i needs	Noise emission
AnyRAID support	cache for RAID 6/60 support. 720ix must have a cache.	
	Optional cache for 720i/720ix: 1GB read-only memory. 1GB/2GB/4GB flash with	
	super capacitor. Flash options include CacheVault, CacheCade Pro, and FastPath.	
	Also supports AnyRAID 110i on no front bay model, RAID 0 or 1	Environmental
	Up to 8 (0-7), 16 (0-15) or 24 (0-23) 2.5" front hot-swap disk drive bays. Up to 2	specification
Disk drive bays	optional 2.5" rear disk drive bays on 720ix models, hot-swap. Rear bays support	
DISK UTIVE Days	SATA only. On 24 x 2.5" models, 4 of 24 front 2.5" bay supports PCIe SSD, easy-	
	swap, optional AnyBay Enablement kit is needed (AnyBay kit needs 2 PCIe slots)	Weight
	Supports the following hot-swap drives: 2.5" hard drive up to 1.8TB (SAS)/1TB	Dimensions
Internal storage	(SATA), 2.5" SSD up to 800GB (SATA/SAS).	Diffictionorio
	Aslo supports easy-swap 2.5" PCle SSD up to 1.6TB each	
M.2 SSD module	Up to 2 M.2 SSD drives via optional M.2 module, no front bay with 110i or 8/16/24 x	nature 4
	2.5" model with 720ix only, 80GB or 120GB each	1 5
SD module	Up to 2 SDHC flash cards via optional SD module, 8GB or 32GB each	2 6
	Supports 1.6TB or 3.2TB PCIe SSD adapter	3
Optical drive	Optional one Ultraslim optical drive on 8/16 x 2.5" model, DVD-ROM or DVD±RW	
	Supports up to one LTO-6 internal SAS tape drive on 8 x 2.5" and 720ix model.	Expansion slo
Tape drive bays	Note: Tape drive, rear disk drive, and M.2 SSD can not be supported simultaneously, only one device can be	Up to eight half-
	Selected per system.	depending on the
Network interfaces	One dedicated management port, one AnyFabric slot for customized LOM. Discrete network options is also available via PCIe slots	Slot 1 (riser car
	Power-on and administrator password. Optional Trusted Platform Module (TCG	Slot 2 (riser car Slot 3 (riser car
Security features	1.2-compliant). Optional chassis intrusion switch	Slot 4 (onboard
	Supports ThinkServer System Manager (TSM), optional TSM Premium.	Slot 5 (riser car
	UEFI. Onboard Aspeed AST2400 graphics/management processor,	Slot 6 (riser car
_	IPMI 2.0-compliant baseboard management controller (BMC).	Slot 7 (onboard
Systems	Control Panel LEDs shows the status of power, ID, network, system.	Slot 8 (onboard
management	Supports ThinkServer management software: Diagnostics, Deployment Manager,	Slots 1 and 2 ca
	Energy Manager, System Manager, Partner Pack for VMware vCenter and Microsoft	Slots 5 and 6 ca
	System Center Operations Manager, Power Planner	Note: 1. Slot 1-8 are
	Microsoft Windows Server 2012 R2/2012/2008 R2. Windows Small Business	model needs 1600 V
Operating systems	Server 2011. Red Hat Enterprise Linux 6.5/6.6/7. SUSE Linux Enterprise Server 11.	
supported	VMware vSphere (ESXi) 5.1 P5/5.5 U2/6.0	Core Options
D	3-year limited onsite service with 9x5/NBD.	4X70F28589
Base warranty	Some parts are Customer Replaceable Units	4X20F28577
		4XF0G45867

	Power supply	Up to two redundant hot-swap 550 W ac, 750 W ac, 1100 W ac, or 1600 W ac power supplies. 550 W, 1100 W, and 1600 W are 80 PLUS Platinum qualified, 750 W is 80 PLUS Platinum or Titanium qualified. 750 W Titanium is 200V - 240V, others are 110V - 240V. 1600 W will automatically operate in 1100W if the system line input is 100-127V. Up to 105W CPU with 24 DIMMs or 135W CPU with 16 DIMMs on 550 W and 16 x 2.5" model. 550 W is not supported on 24 x 2.5" model		
1	Graphics	Onboard Aspeed AST2400 with 16MB memory, one DisplayPort on front, one DisplayPort on rear. Maximum resolution: 1920x1200@60Hz		
1	Front ports	Two USB 2.0, one DisplayPort		
1	Rear ports	One DisplayPort, two USB 3.0, one RJ-45 (dedicate mgmt), one serial (9-pin)		
1	Cooling Six (5+1, dual processors) or four (3+1, single pr		3+1, single processor), hot-swap	
	Hot-swap parts	-swap parts Disk drives, power supplies, and fans		
1	Noise emissions	Operating: < 6.5 Bels, Idle: < 6 Bels (Maximum configuration)		
	Environmental specification	Temperature - operating Temperature - non operating (no package) Temperature - non operating (with package) Altitude - operating Humidity - operating Humidity - storage (with package)	41 ° F to 113 ° F (5 ° C to 45 ° C) -10 ° C to 60 ° C -40 ° C to 60 ° C (Unpressurized): 0-10000ft (0-3048m) 8%~90%, non-condensing 8%~90%, non-condensing	
		Note: 45 ° C continuous operation configuration limitation: no 135W or 145W CPU/no GPU card/ redundant PSU/no FLFH card/no PCIe SSD adapter.		
4	Weight	Minimum configuration: 16 kg (35.3 lb), maximum: 32 kg (70.5 lb)		
	Dimensions	Height: 87 mm (3.4 in), width: 482 mm (19 in), depth: 764 mm (30 in)		
		PSU1	8 7 5 6 4	

### Expansion slots

Up to eight half-length PCIe 3.0 slots, or up to six PCIe 3.0 slots with two full size PCIe 3.0 x16 slots,

PSU<sub>2</sub>

Optional rear bay

depending on the riser cards and processors installed: Slot 1 (riser card 1): PCle 3.0 x 16, half length, full height Slot 2 (riser card 1): PCIe 3.0 x 16, half length, full height Slot 3 (riser card 1): PCle 3.0 x 16, half length, full height

Specification

Slot 4 (onboard): PCle 3.0 x 16, low-profile, half length, requires 2nd CPU Slot 5 (riser card 2): PCle 3.0 x 16, half length, full height, requires 2nd riser card and 2nd CPU Slot 6 (riser card 2): PCle 3.0 x 16, half length, full height, requires 2nd riser card and 2nd CPU

PCIe 3.0 x 16, low-profile, half length, requires 2nd CPU Slot 7 (onboard): Slot 8 (onboard): PCIe 3.0 x 16, low-profile, half length, requires 2nd CPU

Slots 1 and 2 can be replaced with one PCIe 3.0 x16 slot, double wide, full length, full height, Slots 5 and 6 can be replaced with one PCIe 3.0 x16 slot, double wide, full length, full height.

Note: 1. Slot 1-8 are x8 wired. 2. One full size PCIe 3.0 x16 slot model needs 1100 W or 1600 W PSU, two full size PCIe 3.0 x16 slots

model needs 1600 W PSU. 3. Full size PCIe x16 slot is not available when tape drive is used.

### Core Options for ThinkServer RD650 (partial)

4X70F28589 ThinkServer 8GB DDR4-2133MHz (1Rx4) RDIMM

4X20F28577 Lenovo ThinkServer Gen 5 1100W Platinum Hot Swap Power Supply 4XF0G45867 ThinkServer System Manager Premium (TSM Premium)

4X90F92980 ThinkServer DisplayPort to VGA Dongle

For a list of all supported options, Please see *ThinkServer RD650 Options* sheet.

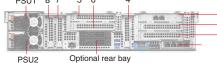
AnyFabric

Type- model	Processor	2nd CPU	Memory	AnyRAID	Disk Bays	Disk drives	M.2/SD module	PCle x8 SSD adpr	Tape	Slots (HL/ FHFL)	Optical	AnyFabric		Chassis intrusion switch	System mgmt	Preloaded OS	Power
70DR002SUX	1xE5-2620 v3 6C/2.4GHz/ 15MB/85W/1866MHz	4XG0F28819	1x8GB 2133MHz RDIMM	510i	8x2.5" HS	Open	No	No	No	3/0	No	No	TPM	No	TSM	No	750Wx1 Platinum
70DR002RUX	1xE5-2620 v3 6C/2.4GHz/ 15MB/85W/1866MHz	4XG0F28819	2x8GB 2133MHz RDIMM	720i+1GB RAM	8x2.5" HS	2x300GB 2.5" SAS6Gbs 10K	No	No	No	3/0	No	GbEx4 RJ-45	TPM	No	TSM Premium	No	750Wx2 Platinum

Components	Specification									
Form factor	2U rack									
	Up to two 145W Intel Xeon E5-2600 v3 family processors with 18 cores up to	11								
	2.3GHz, 16 cores up to 2.3GHz, 14 cores up to 2.6GHz, 12 cores up to 2.6GHz,	11_								
Processor	10 cores up to 2.6GHz, 8 cores up to 3.2GHz, 6 cores up to 3.4GHz,	F								
	4 cores up to 3.5GHz. Two QPI link up to 9.6 GT/s.									
	Up to 2133MHz memory speed. Up to 45MB cache	41								
Chipset	Intel C612 Platform Controller Hub (PCH)	J⊨								
Memory DIMMs	24 DIMM sockets (12 DIMMs per processor), 8-channel capable (4-channel per									
INICITIOTY DIIVIIVIS	processor). RDIMM and LRDIMM (cannot be intermixed), DDR4, up to 2133MHz									
Memory capacity	384GB (RDIMM, 16GB x 24)/768GB (LRDIMM, 32GB x 24)	F								
Memory protection	ECC, memory mirroring, lockstep, and memory sparing	E								
	Supports AnyRAID 510i and 720i on 8 x 2.5" model, 720ix on 8/16/24 x 2.5" model.									
	RAID 0, 1, 10 with AnyRAID 510i, 6Gb/s SAS/SATA, optional key for RAID 5/50.									
	RAID 0, 1, 10, 5, 50, 6, 60 with AnyRAID 720i/720ix. 12Gb/s SAS/SATA. 720i needs	:   N								
AnyRAID support	cache for RAID 6/60 support. 720ix must have a cache.									
	Optional cache for 720i/720ix: 1GB read-only memory. 1GB/2GB/4GB flash with									
	super capacitor. Flash options include CacheVault, CacheCade Pro, and FastPath.	11,								
	Also supports AnyRAID 110i on no front bay model, RAID 0 or 1									
	Up to 8 (0-7), 16 (0-15) or 24 (0-23) 2.5" front hot-swap disk drive bays. Up to 2	8								
Disk drive bays	optional 2.5" rear disk drive bays on 720ix models, hot-swap. Rear bays support									
DISK UTIVE Days	SATA only. On 24 x 2.5" models, 4 of 24 front 2.5" bay supports PCIe SSD, easy-									
	swap, optional AnyBay Enablement kit is needed (AnyBay kit needs 2 PCle slots)	J١								
	Supports the following hot-swap drives: 2.5" hard drive up to 1.8TB (SAS)/1TB	]								
Internal storage	(SATA), 2.5" SSD up to 800GB (SATA/SAS).	16								
	Aslo supports easy-swap 2.5" PCIe SSD up to 1.6TB each	_								
M.2 SSD module	Up to 2 M.2 SSD drives via optional M.2 module, no front bay with 110i or 8/16/24 x									
	2.5" model with 720ix only, 80GB or 120GB each	4								
SD module	Up to 2 SDHC flash cards via optional SD module, 8GB or 32GB each									
PCIe SSD adapter	Supports 1.6TB or 3.2TB PCIe SSD adapter									
Optical drive	Optional one Ultraslim optical drive on 8/16 x 2.5" model, DVD-ROM or DVD±RW	1_								
•	Supports up to one LTO-6 internal SAS tape drive on 8 x 2.5" and 720ix model.	E								
Tape drive bays	Note: Tape drive, rear disk drive, and M.2 SSD can not be supported simultaneously, only one device can be	1								
	selected per system.	d								
Network interfaces	One dedicated management port, one AnyFabric slot for customized LOM. Discrete									
	network options is also available via PCle slots	5								
Security features	Power-on and administrator password. Optional Trusted Platform Module (TCG	S								
,	1.2-compliant). Optional chassis intrusion switch	5								
	Supports ThinkServer System Manager (TSM), optional TSM Premium.	S								
	UEFI. Onboard Aspeed AST2400 graphics/management processor,	5								
Systems	IPMI 2.0-compliant baseboard management controller (BMC).	5								
management	Control Panel LEDs shows the status of power, ID, network, system.	8								
	Supports ThinkServer management software: Diagnostics, Deployment Manager,									
	Energy Manager, System Manager, Partner Pack for VMware vCenter and Microsof									
	System Center Operations Manager, Power Planner	١^								
Operating systems	Microsoft Windows Server 2012 R2/2012/2008 R2. Windows Small Business	n								
supported	Server 2011. Ned Hat Enterprise Linux 6.5/6.6/7. 303E Linux Enterprise Server 11	· C								
	VMware vSphere (ESXi) 5.1 P5/5.5 U2/6.0	4								
Base warranty	3-year limited onsite service with 9x5/NBD.	4								
	Some parts are Customer Replaceable Units	٦ <u>-</u>								

	Components	Specification						
	Power supply	Up to two redundant hot-swap 550 W ac, 750 W ac, 1100 W ac, or 1600 W ac power supplies. 550 W, 1100 W, and 1600 W are 80 PLUS Platinum qualified, 750 W is 80 PLUS Platinum or Titanium qualified. 750 W itanium is 200V - 240V, others are 110V - 240V. 1600 W will automatically operate in 1100W if the system line input is 100-127V. Up to 105W CPU with 24 DIMMs or 135W CPU with 16 DIMMs on 550 W and 16 x 2.5" model. 550 W is not supported on 24 x 2.5" model						
	Graphics	Onboard Aspeed AST2400 with 16MB memory, one DisplayPort on front, one DisplayPort on rear. Maximum resolution: 1920x1200@60Hz						
1	Front ports	Two USB 2.0, one DisplayPort						
1	Rear ports	One DisplayPort, two USB 3.0, one RJ-45 (dedicate mgmt), one serial (9-pi						
1	Cooling	Six (5+1, dual processors) or four (3+1, single processor), hot-swap						
	Hot-swap parts	Disk drives, power supplies, and fans						
1	Noise emissions	Operating: < 6.5 Bels, Idle: < 6 Bels (Maximum configuration)						
	Environmental specification	Temperature - operating						
		Note: 45 °C continuous operation configuration limitation: no 135W or 145W CPU/no GPU card/ redundant PSU/no FLFH card/no PCIe SSD adapter.						
4	Weight	Minimum configuration: 16 kg (35.3 lb), maximum: 32 kg (70.5 lb)						
1	Dimensions	Height: 87 mm (3.4 in), width: 482 mm (19 in), depth: 764 mm (30 in)						
	PSU1 8 7 5 6 4							





### **Expansion slots**

Up to eight half-length PCle 3.0 slots, or up to six PCle 3.0 slots with two full size PCle 3.0 x16 slots,

depending on the riser cards and processors installed:
Slot 1 (riser card 1): PCle 3.0 x 16, half length, full height
Slot 2 (riser card 1): PCle 3.0 x 16, half length, full height
Slot 3 (riser card 1): PCle 3.0 x 16, half length, full height
Slot 4 (ophoard): PCle 3.0 x 16, low-profile, half length

Slot 4 (onboard): PCIe 3.0 x 16, low-profile, half length, requires 2nd CPU Slot 5 (riser card 2): PCIe 3.0 x 16, half length, full height, requires 2nd riser card and 2nd CPU

Slot 6 (riser card 2): PCIe 3.0 x 16, half length, full height, requires 2nd riser card and 2nd CPU Slot 7 (onboard): PCIe 3.0 x 16, low-profile, half length, requires 2nd CPU

Slot 7 (onboard): PCIe 3.0 x 16, low-profile, half length, requires 2nd CPU Slot 8 (onboard): PCIe 3.0 x 16, low-profile, half length, requires 2nd CPU

Slots 1 and 2 can be replaced with one PCIe 3.0 x16 slot, double wide, full length, full height, t Slots 5 and 6 can be replaced with one PCIe 3.0 x16 slot, double wide, full length, full height.

Note: 1. Slot 1-8 are x8 wired. 2. One full size PCle 3.0 x16 slot model needs 1100 W or 1600 W PSU, two full size PCle 3.0 x16 slots model needs 1600 W PSU. 3. Full size PCle x16 slot is not available when tape drive is used.

### Core Options for ThinkServer RD650 (partial)

4X70F28589 ThinkServer 8GB DDR4-2133MHz (1Rx4) RDIMM

4X20F28577 Lenovo ThinkServer Gen 5 1100W Platinum Hot Swap Power Supply 4XF0G45867 ThinkServer System Manager Premium (TSM Premium)

4X90F92980 ThinkServer DisplayPort to VGA Dongle

For a list of all supported options, Please see *ThinkServer RD650 Options* sheet.

								PCle	Slots					Chassis				
Type-					Disk		M.2/SD	SSD	(HL/		Tape	Discrete		intrusion	System	Preloaded	Base	
model	Processor	2nd CPU	Memory	AnyRAID	bays	Disk drives	module	adpr	FHFL)	Optical	drive	ethernet	TPM	switch	mgmt	os	wty	Power
70DT000CUX	1xE5-2603 v3 6C/1.6GHz/	4XG0F28821	1x8GB 2133MHz	720ix	16x2.5"	Open	No	No	0/0	No	No	No	ТРМ	No	TSM	No	3-year	750Wx1
70D100000X	15MB/85W/1600MHz	47GUI 2002 I	RDIMM	+1GB Flash	HS	Open	INO	140	0/0	110	140	140	11 101	110	TOW	140	J-yeai	Platinum

Components	Specification									
Form factor	2U rack	1Г								
	Up to two 145W Intel Xeon E5-2600 v3 family processors with 18 cores up to	11								
	2.3GHz, 16 cores up to 2.3GHz, 14 cores up to 2.6GHz, 12 cores up to 2.6GHz,									
Processor	10 cores up to 2.6GHz, 8 cores up to 3.2GHz, 6 cores up to 3.4GHz,	F								
	4 cores up to 3.5GHz. Two QPI link up to 9.6 GT/s.									
	Up to 2133MHz memory speed. Up to 45MB cache									
Chipset	Intel C612 Platform Controller Hub (PCH)	lL								
Memory DIMMs	24 DIMM sockets (12 DIMMs per processor), 8-channel capable (4-channel per									
INTERTIOR & DITVINS	24 DIMM sockets (12 DIMMs per processor), 8-channel capable (4-channel per processor). RDIMM and LRDIMM (cannot be intermixed), DDR4, up to 2133MHz									
Memory capacity	384GB (RDIMM, 16GB x 24)/768GB (LRDIMM, 32GB x 24)									
Memory protection	ECC, memory mirroring, lockstep, and memory sparing	F								
, , ,	Supports AnyRAID 510i and 720i on 8 x 2.5" model, 720ix on 8/16/24 x 2.5" model.									
	RAID 0, 1, 10 with AnyRAID 510i, 6Gb/s SAS/SATA, optional key for RAID 5/50.	l F								
	RAID 0, 1, 10, 5, 50, 6, 60 with AnyRAID 720i/720ix. 12Gb/s SAS/SATA. 720i needs									
AnyRAID support	cache for RAID 6/60 support. 720ix must have a cache.	ΙĖ								
'	Optional cache for 720i/720ix: 1GB read-only memory. 1GB/2GB/4GB flash with									
	super capacitor. Flash options include CacheVault, CacheCade Pro, and FastPath.	11_								
	Also supports AnyRAID 110i on no front bay model, RAID 0 or 1	E								
	Up to 8 (0-7), 16 (0-15) or 24 (0-23) 2.5" front hot-swap disk drive bays. Up to 2	s								
Diek drive hove	optional 2.5" rear disk drive bays on 720ix models, hot-swap. Rear bays support									
Disk drive bays	SATA only. On 24 x 2.5" models, 4 of 24 front 2.5" bay supports PCIe SSD, easy-									
	swap, optional AnyBay Enablement kit is needed (AnyBay kit needs 2 PCle slots)	١b								
	Supports the following hot-swap drives: 2.5" hard drive up to 1.8TB (SAS)/1TB									
Internal storage	(SATA), 2.5" SSD up to 800GB (SATA/SAS).	ᆙ								
	Aslo supports easy-swap 2.5" PCIe SSD up to 1.6TB each									
M.2 SSD module	Up to 2 M.2 SSD drives via optional M.2 module, no front bay with 110i or 8/16/24 x									
	2.5" model with 720ix only, 80GB or 120GB each									
SD module	Up to 2 SDHC flash cards via optional SD module, 8GB or 32GB each									
PCIe SSD adapter	Supports 1.6TB or 3.2TB PCIe SSD adapter	]								
Optical drive	Optional one Ultraslim optical drive on 8/16 x 2.5" model, DVD-ROM or DVD±RW	1_								
'	Supports up to one LTO-6 internal SAS tape drive on 8 x 2.5" and 720ix model.	E								
Tape drive bays	Note: Tape drive, rear disk drive, and M.2 SSD can not be supported simultaneously, only one device can be	١,								
	selected per system.	d								
Network interfaces	One dedicated management port, one AnyFabric slot for customized LOM. Discrete	3								
	network options is also available via PCIe slots	S								
Security features	Power-on and administrator password. Optional Trusted Platform Module (TCG	5								
,	1.2-compliant). Optional chassis intrusion switch	ને દે								
	Supports ThinkServer System Manager (TSM), optional TSM Premium.	5								
	UEFI. Onboard Aspeed AST2400 graphics/management processor,	5								
Systems	IPMI 2.0-compliant baseboard management controller (BMC).	99999								
management	Control Panel LEDs shows the status of power, ID, network, system.	S								
	Supports ThinkServer management software: Diagnostics, Deployment Manager,									
	Energy Manager, System Manager, Partner Pack for VMware vCenter and Microsoft									
	System Center Operations Manager, Power Planner	١٨								
Operating systems	Microsoft Windows Server 2012 R2/2012/2008 R2. Windows Small Business	n								
supported	Server 2011. Ned Hat Enterprise Linux 6.5/6.6/7. 303E Linux Enterprise Server 11.	C								
	VMware vSphere (ESXi) 5.1 P5/5.5 U2/6.0	4								
Base warranty	3-year limited onsite service with 9x5/NBD. Some parts are Customer Replaceable Units	4								
	Donie parts are Custoffier neplaceable Offics	٦ <u>-</u>								

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Components	Specification							
Power supply	ac power supplies. 550 W, 1100 W, qualified, 750 W is 80 PLUS Platini is 200V - 240V, others are 110V - 21100W if the system line input is 10 or 135W CPU with 16 DIMMs on 5 supported on 24 x 2.5" model	W ac, 750 W ac, 1100 W ac, or 1600 W and 1600 W are 80 PLUS Platinum um or Titanium qualified. 750 W Titanium 240V. 1600 W will automatically operate in 200-127V. Up to 105W CPU with 24 DIMMs 50 W and 16 x 2.5" model. 550 W is not						
Graphics	Onboard Aspeed AST2400 with 16MB memory, one DisplayPort on front, one DisplayPort on rear. Maximum resolution: 1920x1200@60Hz							
Front ports	Two USB 2.0, one DisplayPort							
Rear ports	One DisplayPort, two USB 3.0, one RJ-45 (dedicate mgmt), one serial (9-pin)							
Cooling	Six (5+1, dual processors) or four (3+1, single processor), hot-swap							
Hot-swap parts	Disk drives, power supplies, and fa	ns						
Noise emissions	Operating: < 6.5 Bels, Idle: < 6 Bels	s (Maximum configuration)						
Environmental specification	Temperature - operating Temperature - non operating (no package) Temperature - non operating (with package) Altitude - operating Humidity - operating Humidity - storage (with package)	41 °F to 113 °F (5 °C to 45 °C) -10 °C to 60 °C -40 °C to 60 °C (Unpressurized): 0-10000ft (0-3048m) 8%-90%, non-condensing 8%-90%, non-condensing						
Note: 45 ° C continuous operation configuration limitation: no 135W or 145W CPU/no GPU card/redundant PSU/no FLFH card/no PCIe SSD adapter.								
Weight	Minimum configuration: 16 kg (35.3							
Dimensions	Height: 87 mm (3.4 in), width: 482 i	mm (19 in), depth: 764 mm (30 in)						
Indiane		8 7 5 6 4						

## Expansion slots

Up to eight half-length PCIe 3.0 slots, or up to six PCIe 3.0 slots with two full size PCIe 3.0 x16 slots,

PSU<sub>2</sub>

Optional rear bay

depending on the riser cards and processors installed: Slot 1 (riser card 1): PCle 3.0 x 16, half length, full height Slot 2 (riser card 1): PCle 3.0 x 16, half length, full height Slot 3 (riser card 1): PCle 3.0 x 16, half length, full height

Slot 4 (onboard): PCle 3.0 x 16, low-profile, half length, requires 2nd CPU Slot 5 (riser card 2): PCle 3.0 x 16, half length, full height, requires 2nd riser card and 2nd CPU

Slot 6 (riser card 2): PCle 3.0 x 16, half length, full height, requires 2nd riser card and 2nd CPU

PCIe 3.0 x 16, low-profile, half length, requires 2nd CPU Slot 7 (onboard): Slot 8 (onboard): PCIe 3.0 x 16, low-profile, half length, requires 2nd CPU

Slots 1 and 2 can be replaced with one PCIe 3.0 x16 slot, double wide, full length, full height, Slots 5 and 6 can be replaced with one PCIe 3.0 x16 slot, double wide, full length, full height.

Note: 1. Slot 1-8 are x8 wired. 2. One full size PCIe 3.0 x16 slot model needs 1100 W or 1600 W PSU, two full size PCIe 3.0 x16 slots model needs 1600 W PSU. 3. Full size PCIe x16 slot is not available when tape drive is used.

### Core Options for ThinkServer RD650 (partial)

4X70F28589 ThinkServer 8GB DDR4-2133MHz (1Rx4) RDIMM

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4X90F92980 ThinkServer DisplayPort to VGA Dongle

For a list of all supported options, Please see *ThinkServer RD650 Options* sheet.

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								PCle	Slots					Chassis				
Type-					Disk		M.2/SD	SSD	(HL/		Tape	Discrete		intrusion	System	Preloaded	Base	
model	Processor	2nd CPU	Memory	AnyRAID	bays	Disk drives	module	adpr	FHFL)	Optical	drive	ethernet	TPM	switch	mgmt	os	wty	Power
70D20024UX	1xE5-2603 v3 6C/1.6GHz/	4XG0F28821	1x8GB 2133MHz	720ix	24x2.5"	Opon	No	No	0/0	No	No	No	ТРМ	No	TSM	No	3-vear	750Wx1
70D200240X	15MB/85W/1600MHz	4AGUF20021	RDIMM	+1GB RAM	HS	Open	INO	INO	0/0	INO	INO	INO	IFIVI	INO	I SIVI	NO	3-year	Platinum

Components	Specification	Components							
Form factor	2U rack								
	Up to two 145W Intel Xeon E5-2600 v3 family processors with 18 cores up to								
	2.3GHz, 16 cores up to 2.3GHz, 14 cores up to 2.6GHz, 12 cores up to 2.6GHz,	Power supply							
Processor	1.0 00:00 up to 2:00:12, 0 00:00 up to 0:20:12, 0 00:00 up to 0:10:12,								
	4 cores up to 3.5GHz. Two QPI link up to 9.6 GT/s.								
	Up to 2133MHz memory speed. Up to 45MB cache								
Chipset	Intel C612 Platform Controller Hub (PCH)								
Memory DIMMs	24 DIMM sockets (12 DIMMs per processor), 8-channel capable (4-channel per	Graphics							
	processor). RDIMM and LRDIMM (cannot be intermixed), DDR4, up to 2133MHz	'							
Memory capacity	384GB (RDIMM, 16GB x 24)/768GB (LRDIMM, 32GB x 24)	Front ports							
Memory protection	ECC, memory mirroring, lockstep, and memory sparing	Rear ports							
	Supports AnyRAID 510i and 720i on 8 x 2.5" model, 720ix on 8/16/24 x 2.5" model.	Cooling							
	RAID 0, 1, 10 with AnyRAID 510i, 6Gb/s SAS/SATA, optional key for RAID 5/50.	Hot-swap parts							
	RAID 0, 1, 10, 5, 50, 6, 60 with AnyRAID 720i/720ix. 12Gb/s SAS/SATA. 720i needs	Noise emissions							
AnyRAID support	cache for RAID 6/60 support. 720ix must have a cache.								
	Optional cache for 720i/720ix: 1GB read-only memory. 1GB/2GB/4GB flash with								
	super capacitor. Flash options include CacheVault, CacheCade Pro, and FastPath.	Environmental							
	Also supports AnyRAID 110i on no front bay model, RAID 0 or 1	specification							
Disk drive bays	Up to 8 (0-7), 16 (0-15) or 24 (0-23) 2.5" front hot-swap disk drive bays. Up to 2	Specification							
	optional 2.5" rear disk drive bays on 720ix models, hot-swap. Rear bays support								
	SATA only. On 24 x 2.5" models, 4 of 24 front 2.5" bay supports PCle SSD, easy-								
	swap, optional AnyBay Enablement kit is needed (AnyBay kit needs 2 PCle slots) Supports the following hot-swap drives: 2.5" hard drive up to 1.8TB (SAS)/1TB	Weight							
Internal storage	(SATA), 2.5" SSD up to 800GB (SATA/SAS).	Dimensions							
internal storage	Aslo supports easy-swap 2.5" PCIe SSD up to 1.6TB each								
	Up to 2 M.2 SSD drives via optional M.2 module, no front bay with 110i or 8/16/24 x	Testore							
M.2 SSD module	2.5" model with 720ix only, 80GB or 120GB each	0 4							
SD module	Up to 2 SDHC flash cards via optional SD module, 8GB or 32GB each	2 6							
	Supports 1.6TB or 3.2TB PCIe SSD adapter	3 7							
Optical drive	Optional one Ultraslim optical drive on 8/16 x 2.5" model, DVD-ROM or DVD±RW								
Optical drive	Supports up to one LTO-6 internal SAS tape drive on 8 x 2.5" and 720ix model.	<b>Expansion slot</b>							
Tape drive bays	Note: Tape drive, rear disk drive, and M.2 SSD can not be supported simultaneously, only one device can be	Up to eight half-l							
	selected per system.	depending on th							
Network interfaces	One dedicated management port, one AnyFabric slot for customized LOM. Discrete	Slot 1 (riser card							
INCIWOIR IIIICIIACCS	network options is also available via PCIe slots	Slot 2 (riser card							
Security features	Power-on and administrator password. Optional Trusted Platform Module (TCG	Slot 3 (riser card							
Coounty locatoroo	1.2-compliant). Optional chassis intrusion switch	Slot 4 (onboard)							
	Supports ThinkServer System Manager (TSM), optional TSM Premium.	Slot 5 (riser card							
	UEFI. Onboard Aspeed AST2400 graphics/management processor,	Slot 6 (riser card							
Systems	IPMI 2.0-compliant baseboard management controller (BMC).	Slot 7 (onboard)							
management	Control Panel LEDs shows the status of power, ID, network, system.	Slot 8 (onboard)							
	Supports ThinkServer management software: Diagnostics, Deployment Manager,	Slots 1 and 2 car							
	Energy Manager, System Manager, Partner Pack for VMware vCenter and Microsoft								
	System Center Operations Manager, Power Planner	Note: 1. Slot 1-8 are x							
Operating systems	Microsoft Windows Server 2012 R2/2012/2008 R2. Windows Small Business Server 2011. Red Hat Enterprise Linux 6.5/6.6/7. SUSE Linux Enterprise Server 11.	model needs 1600 W							
supported	VMware vSphere (ESXi) 5.1 P5/5.5 U2/6.0	Core Options for							
	3-year limited onsite service with 9x5/NBD.	4X70F28589 T							
Base warranty	Some parts are Customer Replaceable Units	4X20F28577 L							
	Some parte are executive representative or the	4XF0G45867 T							

	Components	Specification							
	Power supply	ac power supplies. 550 W, 1100 W, qualified, 750 W is 80 PLUS Platinu is 200V - 240V, others are 110V - 21100W if the system line input is 10 or 135W CPU with 16 DIMMs on 55 supported on 24 x 2.5" model	W ac, 750 W ac, 1100 W ac, or 1600 W and 1600 W are 80 PLUS Platinum Im or Titanium qualified. 750 W Titanium 40V. 1600 W will automatically operate in 10-127V. Up to 105W CPU with 24 DIMMs 50 W and 16 x 2.5" model. 550 W is not						
1	Graphics	Onboard Aspeed AST2400 with 16I DisplayPort on rear. Maximum resol	MB memory, one DisplayPort on front, one lution: 1920x1200@60Hz						
1	Front ports	Two USB 2.0, one DisplayPort							
1	Rear ports	One DisplayPort, two USB 3.0, one RJ-45 (dedicate mgmt), one serial (9-p							
1	Cooling	Six (5+1, dual processors) or four (3+1, single processor), hot-swap							
	Hot-swap parts	Disk drives, power supplies, and fans							
1	Noise emissions	Operating: < 6.5 Bels, Idle: < 6 Bels	(Maximum configuration)						
_	Environmental specification	Temperature - non operating (no package) Temperature - non operating (with package) Altitude - operating Humidity - operating Humidity - storage (with package)	41 ° F to 113 ° F (5 ° C to 45 ° C) -10 ° C to 60 ° C -40 ° C to 60 ° C (Unpressurized): 0-10000ft (0-3048m) 8%-90%, non-condensing 8%-90%, non-condensing						
		Note: 45 ° C continuous operation configuration limitation: no 135W or 145W CPU/no GPU card/ redundant PSU/no FLFH card/no PCIe SSD adapter.							
4	Weight	Minimum configuration: 16 kg (35.3							
	Dimensions	Height: 87 mm (3.4 in), width: 482 n	nm (19 in), depth: 764 mm (30 in)						
		PSU1	8 7 5 6 4						
1	helien								

### Expansion slots

Up to eight half-length PCIe 3.0 slots, or up to six PCIe 3.0 slots with two full size PCIe 3.0 x16 slots,

PSU<sub>2</sub>

Optional rear bay

depending on the riser cards and processors installed: Slot 1 (riser card 1): PCle 3.0 x 16, half length, full height Slot 2 (riser card 1): PCle 3.0 x 16, half length, full height Slot 3 (riser card 1): PCle 3.0 x 16, half length, full height

Specification

Slot 4 (onboard): PCle 3.0 x 16, low-profile, half length, requires 2nd CPU Slot 5 (riser card 2): PCle 3.0 x 16, half length, full height, requires 2nd riser card and 2nd CPU Slot 6 (riser card 2): PCle 3.0 x 16, half length, full height, requires 2nd riser card and 2nd CPU

Slot 7 (onboard): PCIe 3.0 x 16, low-profile, half length, requires 2nd CPU Slot 8 (onboard): PCIe 3.0 x 16, low-profile, half length, requires 2nd CPU

Slots 1 and 2 can be replaced with one PCIe 3.0 x16 slot, double wide, full length, full height, Slots 5 and 6 can be replaced with one PCIe 3.0 x16 slot, double wide, full length, full height.

Note: 1. Slot 1-8 are x8 wired. 2. One full size PCIe 3.0 x16 slot model needs 1100 W or 1600 W PSU, two full size PCIe 3.0 x16 slots model needs 1600 W PSU. 3. Full size PCIe x16 slot is not available when tape drive is used.

### Core Options for ThinkServer RD650 (partial)

4X70F28589 ThinkServer 8GB DDR4-2133MHz (1Rx4) RDIMM

4X20F28577 Lenovo ThinkServer Gen 5 1100W Platinum Hot Swap Power Supply 4XF0G45867 ThinkServer System Manager Premium (TSM Premium)

4X90F92980 ThinkServer DisplayPort to VGA Dongle

For a list of all supported options, Please see *ThinkServer RD650 Options* sheet.

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## **ThinkServer RD650 Options**

### Partial list of accessories supported on ThinkServer RD650

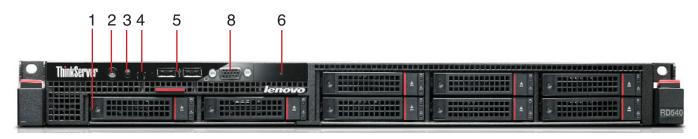
	Processors
4\\0000007	
4XC0F0000	ThinkServer RD650 Intel Xeon E5-2699 v3 (18C, 145W, 2.3GHz) Processor Option Kit
	ThinkServer RD650 Intel Xeon E5-2698 v3 (16C, 135W, 2.3GHz) Processor Option Kit
	ThinkServer RD650 Intel Xeon E5-2697 v3 (14C, 145W, 2.6GHz) Processor Option Kit
4XG0F28810	ThinkServer RD650 Intel Xeon E5-2695 v3 (14C, 120W, 2.3GHz) Processor Option Kit
4XG0F28811	ThinkServer RD650 Intel Xeon E5-2690 v3 (12C, 135W, 2.6GHz) Processor Option Kit
4XG0F28812	ThinkServer RD650 Intel Xeon E5-2683 v3 (14C, 120W, 2.0GHz) Processor Option Kit
	ThinkServer RD650 Intel Xeon E5-2680 v3 (12C, 120W, 2.5GHz) Processor Option Kit
4YC0E20014	ThinkServer RD650 Intel Xeon E5-2670 v3 (12C, 120W, 2.3GHz) Processor Option Kit
4XG0F20014	ThinkServer RD050 little Xeon E5-2070 v3 (12C, 120W, 2.5GHz) Frocessor Option Kit
4XG0F28815	ThinkServer RD650 Intel Xeon E5-2660 v3 (10C, 105W, 2.6GHz) Processor Option Kit
4XG0F28816	ThinkServer RD650 Intel Xeon E5-2650 v3 (10C, 105W, 2.3GHz) Processor Option Kit
4XG0F28817	ThinkServer RD650 Intel Xeon E5-2640 v3 (8C, 90W, 2.6GHz) Processor Option Kit
4XG0F28818	ThinkServer RD650 Intel Xeon E5-2630 v3 (8C, 85W, 2.4GHz) Processor Option Kit
4XG0F28819	ThinkServer RD650 Intel Xeon E5-2620 v3 (6C, 85W, 2.4GHz) Processor Option Kit
4XG0F28820	ThinkServer RD650 Intel Xeon E5-2609 v3 (6C, 85W, 1.9GHz) Processor Option Kit
4XG0F28821	ThinkServer RD650 Intel Xeon E5-2603 v3 (6C, 85W, 1.6GHz) Processor Option Kit
	ThinkServer RD650 Intel Xeon E5-2650L v3 (12C, 65W, 1.8GHz) Processor Option Kit
	ThinkServer RD650 Intel Xeon E5-2630L v3 (8C, 55W, 1.8GHz) Processor Option Kit
	ThinkServer RD650 Intel Xeon E5-2667 v3 (8C, 135W, 3.2GHz) Processor Option Kit
	ThinkServer RD650 Intel Xeon E5-2643 v3 (6C, 135W, 3.4GHz) Processor Option Kit
	ThinkServer RD650 Intel Xeon E5-2637 v3 (4C, 135W, 3.5GHz) Processor Option Kit
4XG0F28837	ThinkServer RD650 Intel Xeon E5-2623 v3 (4C, 105W, 3.0GHz) Processor Option Kit
	ThinkServer RD650 Intel Xeon E5-2685 v3 (12C, 120W, 2.6GHz) Processor Option Kit
	Memory
4X70F28588	ThinkServer 4GB DDR4-2133MHz (1Rx8) RDIMM
	ThinkServer 8GB DDR4-2133MHz (1Rx4) RDIMM
	ThinkServer 16GB DDR4-2133MHz (2Rx4) RDIMM
4X/0F28591	ThinkServer 32GB DDR4-2133MHz (4Rx4) LRDIMM
	Drives - 3.5"
	SATA Hard Drives
4XB0F28712	ThinkServer Gen 5 3.5" 1TB 7.2K Enterprise SATA 6Gbps Hot Swap Hard Drive
4XB0F28713	ThinkServer Gen 5 3.5" 2TB 7.2K Enterprise SATA 6Gbps Hot Swap Hard Drive
4XB0F28714	ThinkServer Gen 5 3.5" 3TB 7.2K Enterprise SATA 6Gbps Hot Swap Hard Drive
	ThinkServer Gen 5 3.5" 4TB 7.2K Enterprise SATA 6Gbps Hot Swap Hard Drive
	7.2K SAS Hard Drives
4XB0G45716	ThinkServer Gen 5 3.5" 1TB 7.2K Enterprise SAS 6Gbps Hot Swap Hard Drive
	ThinkServer Gen 5 3.5" 2TB 7.2K Enterprise SAS 6Gbps Hot Swap Hard Drive
4XB0G45718	ThinkServer Gen 5 3.5" 3TB 7.2K Enterprise SAS 6Gbps Hot Swap Hard Drive
4XB0G45719	ThinkServer Gen 5 3.5" 4TB 7.2K Enterprise SAS 6Gbps Hot Swap Hard Drive
3.5" Hot Swap	SATA Solid State Drives
4XB0G45742	ThinkServer Gen 5 3.5" 120GB Value Read-Optimized SATA 6Gbps Hot Swap Solid State Drive
	ThinkServer Gen 5 3.5" 240GB Value Read-Optimized SATA 6Gbps Hot Swap Solid State Drive
	ThinkServer Gen 5 3.5" 300GB Value Read-Optimized SATA 6Gbps Hot Swap Solid State Drive
4VD0C45745	ThinkServer Gen 5 3.5" 480GB Value Read-Optimized SATA 6Gbps Hot Swap Solid State Drive
4XD0G45745	ThinkServer Gen 5 3.5 400GD Value nead-Optimized SATA Cobes List Swap Solid State Drive
	ThinkServer Gen 5 3.5" 600GB Value Read-Optimized SATA 6Gbps Hot Swap Solid State Drive
	ThinkServer Gen 5 3.5" 800GB Value Read-Optimized SATA 6Gbps Hot Swap Solid State Drive
	SAS Solid State Drives
4XB0G45733	ThinkServer Gen 5 3.5" 200GB Enterprise Performance SAS 12Gbps Hot Swap Solid State Drive
4XB0G45734	ThinkServer Gen 5 3.5" 400GB Enterprise Performance SAS 12Gbps Hot Swap Solid State Drive
	ThinkServer Gen 5 3.5" 800GB Enterprise Performance SAS 12Gbps Hot Swap Solid State Drive
	Drives - 2.5"
E" Hot Corre	
	SATA Hard Drives
	ThinkServer Gen 5 2.5" 500GB 7.2K Enterprise SATA 6Gbps Hot Swap Hard Drive
	ThinkServer Gen 5 2.5" 1TB 7.2K Enterprise SATA 6Gbps Hot Swap Hard Drive
	o 10K SAS Hard Drives
4XB0G45722	ThinkServer Gen 5 2.5" 300GB 10K Enterprise SAS 6Gbps Hot Swap Hard Drive
4XB0G45723	ThinkServer Gen 5 2.5" 600GB 10K Enterprise SAS 6Gbps Hot Swap Hard Drive
	ThinkServer Gen 5 2.5" 900GB 10K Enterprise SAS 6Gbps Hot Swap Hard Drive
	ThinkServer Gen 5 2.5" 1.2TB 10K Enterprise SAS 6Gbps Hot Swap Hard Drive
	o 15K SAS Hard Drives
AVDOC 45700	Total Company Copy F. O. E. 1400D 151/ Enterprise CAS COPy List Copy List Copy
4ABUG45/26	ThinkServer Gen 5 2.5" 146GB 15K Enterprise SAS 6Gbps Hot Swap Hard Drive
4XB0G45727	ThinkServer Gen 5 2.5" 300GB 15K Enterprise SAS 6Gbps Hot Swap Hard Drive
	ThinkServer Gen 5 2.5" 450GB 15K Enterprise SAS 6Gbps Hot Swap Hard Drive
	ThinkServer Gen 5 2.5" 600GB 15K Enterprise SAS 6Gbps Hot Swap Hard Drive
	SATA Solid State Drives
	ThinkServer Gen 5 2.5" 120GB Value Read-Optimized SATA 6Gbps Hot Swap Solid State Drive
	ThinkServer Gen 5 2.5" 240GB Value Read-Optimized SATA 6Gbps Hot Swap Solid State Drive
4XBUG45/38	ThinkServer Gen 5 2.5" 300GB Value Read-Optimized SATA 6Gbps Hot Swap Solid State Drive
4 x BDG45739	ThinkServer Gen 5 2.5" 480GB Value Read-Optimized SATA 6Gbps Hot Swap Solid State Drive
+XD00+0700	
4XB0G45740	ThinkServer Gen 5 2.5" 600GB Value Read-Optimized SATA 6Gbps Hot Swap Solid State Drive ThinkServer Gen 5 2.5" 800GB Value Read-Optimized SATA 6Gbps Hot Swap Solid State Drive

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4VD0E00004	PCIe Solid State Drives  Third/Convert 1 CTD in Manager CY200 Device property DCIe 0 0 Celid State Drive by Eugina DCIe 10 0 Celid State DCIE 10 0 C
4XB0F28661	ThinkServer 1.6TB ioMemory SX300 Performance PCIe 2.0 Solid State Drive by FusionIO
4XB0F28662	ThinkServer 3.2TB ioMemory SX300 Performance PCle 2.0 Solid State Drive by FusionIO
4VD0E00000	AnyRAID
	ThinkServer RAID 110i RAID 5 Upgrade
4XB0F28691	ThinkServer RAID 510i AnyRAID Adapter
4XB0F28692	ThinkServer RAID 510i RAID 5 Upgrade ThinkServer RAID 720i AnyRAID Adapter
4XB0F28694	ThinkServer RAID 720ix AnyRAID Adapter with Expander ThinkServer RAID 720i 1GB Modular DRAM Upgrade
	ThinkServer RAID 720i 1GB Modular Flash and Supercapacitor Upgrade
	ThinkServer RAID 720i 2GB Modular Flash and Supercapacitor Upgrade
4ADUF28698	ThinkServer RAID 720i 4GB Modular Flash and Supercapacitor Upgrade
DOI: Eth:	Connectivity & Host Bus Adapters
	Adapters - 1Gbps
	ThinkServer I350-T2 PCIe 1Gb 2 Port Base-T Ethernet Adapter by Intel
	ThinkServer I350-T4 PCIe 1Gb 4 Port Base-T Ethernet Adapter by Intel
	ed Network Adapters - 10Gpbs
	ThinkServer X540-T2 PCIe 10Gb 2 Port Base-T Ethernet Adapter by Intel
	ThinkServer X520-SR2 PCIe 10Gb 2 Port SFP+ Ethernet Adapter by Intel
	ThinkServer X520-DA2 PCIe 10Gb 2 Port SFP+ Ethernet Adapter by Intel
	ThinkServer 10Gb SR Optical Module by Intel
4XC0F28736	ThinkServer OCe14102-UX-L PCIe 10Gb 2 Port SFP+ Converged Network Adapter by Emulex
	ThinkServer 10Gb SR Optical Module by Emulex
PCIe Converg	ed Network Adapters - 40Gpbs
	ThinkServer OCe14401-UX-L PCle 40Gb 1 Port QSFP+ Converged Network Adapter by Emulex
	ThinkServer 40Gb SR Optical Module by Emulex
	annel Adapters
4XB0F28704	ThinkServer LPe16002B-M8-L PCIe 8Gb 2 Port Fibre Channel Adapter by Emulex
4XB0F28705	ThinkServer LPe16002B-M6-L PCle 16Gb 2 Port Fibre Channel Adapter by Emulex
4XC0F28745	ThinkServer QLE2672 PCIe 16Gb 2 Port Fibre Channel Adapter by Qlogic
	ers & Upgrades
4XB0F28699	ThinkServer 9286CV-8e PCle 6Gb 8 Port External SAS RAID Adapter by LSI
4XB0F28700	ThinkServer CacheVault Data Protection Upgrade
	ThinkServer RAID FastPath Key
4XB0F28702	ThinkServer RAID CacheCade Pro 2.0 Key
1)/500 /5000	Backup Options
	ThinkServer LTO-6 Linear Tape Drive Kit by Tandberg
4XB0F28689	ThinkServer 2.5TB SAS 6Gbps LTO-6 Tape
	Redundant Power Supply
	ThinkServer Gen 5 750W Platinum Hot Swap Power Supply
	ThinkServer Gen 5 750W Titanium Hot Swap Power Supply
	ThinkServer Gen 5 1100W Platinum Hot Swap Power Supply
4X20F28578	ThinkServer Gen 5 1600W Platinum Hot Swap Power Supply
	System Options
	ThinkServer Gen 5 2U 4-Post Slide Rail Kit
	ThinkServer Gen 5 2U Cable Management Arm
4XF0G45881	ThinkServer 2U x8/x8/x8 PCIe Riser Kit ThinkServer Gen 5 2U 2.5" 8-Drive Backplane Kit
4XF0G45884	ThinkServer Gen 5 2U 2.5" 16-Drive Backplane Kit
	ThinkServer Gen 5 4-Post Static Rail Kit
	ThinkServer Gen 5 2.5" 2-Drive Rear Backplane Kit
4X90F92980	ThinkServer Gen 5 DisplayPort to VGA Dongle
4XF0G45876	ThinkServer Gen 5 Cable Management Bar
	ThinkServer C13-C14 WW 250V 10A 1.8m Jumper Cord
	ThinkPad Ultraslim USB DVD Burner
	Microsoft Windows Server ROK
4XI0E51561	Windows Server 2012 R2 Standard ROK (2 CPU/2VMs)
	Windows Server 2012 R2 Datacenter ROK (2 CPU)
	Windows Server 2012 R2 Essentials ROK (1-2 CPU)

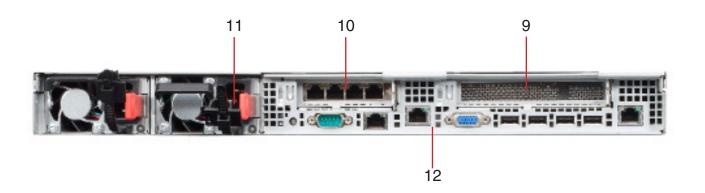
### ThinkServer RD540 Overview - Front and Rear



ThinkServer RD540 with 4x3.5" Disk Drive Bays



ThinkServer RD540 with 8x2.5" Disk Drive Bays



### **Front View**

- 2. 3. 4. 5. 6.

- Hot-swap disk drive bays
  Power Button with LED
  ID button with LED
  2 Network interface status LEDs
  2 USB 2.0
  Intelligent Diagnostics Module (optional)
  Optical (optional, for 3.5" disk drive bay model)
  VGA (for 2.5" disk drive bay model)

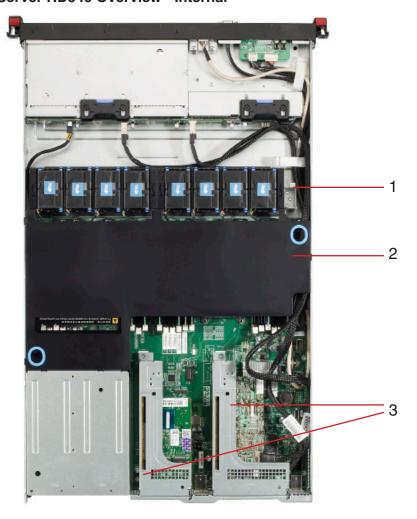
### **Rear View**

- 9. 10.
- PCI Express slots 1\* PCI Express slots 2\* Hot-swap power supplies 11.
- Rear ports: 4 USB 2.0 12.

  - 1 serial 2 ethernet 1 RJ-45 (dedicate/share mgmt) 1 VGA

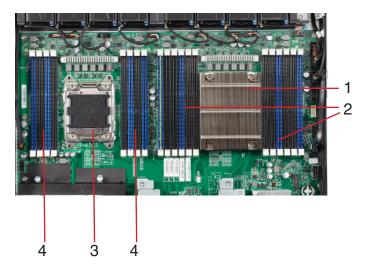
<sup>\*</sup>Adapters are optional

### ThinkServer RD540 Overview - Internal



### **Internal View**

- Non-hot swap cooling fans
   Processors and memory DIMM sockets (under cooling shroud, see below)
   PCI Express slots (\*Adapters are optional)



# Processors and Memory DIMM Sockets (under cooling shroud)

- CPU 1
   12 Memory DIMM sockets for CPU 1
   CPU 2 (optional)
   8 Memory DIMM sockets for CPU 2 (for dual processors model)

# ThinkServer RD540 Platform Specifications

Components	Specifications											
Chipset	Intel C602J Chipset											
Mechanical	• 482.4mm W x 734mm	<ul> <li>19"W x 28.9"D x 1.72"H (with rack handles)</li> <li>482.4mm W x 734mm D x 43.6mm H (with rack handles)</li> <li>17kg (37.5 lb) when fully configured</li> </ul>										
Front ports		og VGA DB-15 connector (for 8x	2.5" disk bays models)									
Rear ports	Four USB 2.0, one seria one RJ-45 (dedicate/sh	Four USB 2.0, one serial (9-pin), two ethernet (RJ-45), one RJ-45 (dedicate/share mgmt), one analog VGA DB-15 connector										
Expansion Slots		via two riser cards, riser card 1 f	0 00000 0									
	Slot 2: Low Profile,	eight, PCI Express 3.0 x16 PCI Express 3.0 x8										
Graphics	Onboard Aspeed AST2		essor, one VGA DB-15 on front (for 00@60Hz	8x2.5" disk bays models),								
Hot-swap parts	Disk drives, power supp	lies										
	Environmental  certifications   • Energy Star Server 2.0 qualified  • RoHS-compliant											
	EMC FCC Class A, CSA CE											
	240VA	Supports										
	Temperature - operating	50 °F to 95 °F (10 °C to 35 °C	)									
	Temperature - non operating (no package)	-10 °C to 60 °C										
	Temperature - non operating (with package)	-40 °C to 70 °C										
	Altitude - operating	Supported Altitude (unpressuri	zed): 0-10000ft (0-3048m)									
	Humidity - operating	8%~80%, non-condensing										
Safety, environment, and certifications	Humidity - non operating (no package)	8%~80%, non-condensing										
	Humidity - non operating (with package)	8%~90%, non-condensing										
		Category	Normal Configuration	High Performance Configuration								
		CPU	1	2								
		HDD	2x 900GB 2.5" SAS 6Gb/s	8x 900GB 2.5" SAS 6Gb/s								
	A annuation as to a	Memory	1x 8GB 1600MHz LVRDIMM	20x 8GB 1600MHz LVRDIMM								
	Acoustic noise (idle/working mode)	PCIe adapters	1350	1350								
	(Idio, Working Inode)	PSU	1x 800W	2x 800W								
		RAID	RAID 700 adapter	RAID 700 adapter								
		Sound Pressure (operating) 38.6 dB(A) 38.7 dB(A)										
		Sound Pressure (idle)	39.0 dB(A)	40.0 dB(A)								

# ThinkServer RD540 Optional Configurations - Processor and Memory

Rack kit	Included in models									
Processor	Two LGA2011 socker up to 8 cores (E5-26 two QPI links up to 8	600 se	ries)/12 c	to two pro ores (E5-2	cessors fro 600 v2 seri	m Intel 2 es),	Keon E5-2	600 or Xec	on E5-2600 v	2 families,
	up to 20MB (E5-260 integrated 4-channe	0 seri	es)/30MB	(E5-2600 y controlle	v2 series) or up to 1600	cache, MHz (E	5-2600 sei	ries)/1866N	ИНz (E5-2600	v2 series)
	The following proces				•	`		,	,	- /
					Processors	s Specif	ications*			Dont
										Part Number
	Intel Xeon E5-2600 Series									
	Xeon E5-2680	8	16	2.7 GHz	3.5 GHz	20MB	8 GT/s	130 W	DDR3-1600	0A89430
	Xeon E5-2670	8	16	2.6 GHz	3.3 GHz	20MB	8 GT/s	115 W	DDR3-1600	
	Xeon E5-2667	6	12	2.9 GHz		15MB		130 W	DDR3-1600	
	Xeon E5-2665	8	16	2.4 GHz	3.1 GHz	20MB	8 GT/s	115 W	DDR3-1600	0A89432
	Xeon E5-2660	8	16	2.2 GHz	3 GHz	20MB	8 GT/s	95 W	DDR3-1600	0A89462
	Xeon E5-2650L	8	16	1.8 GHz	2.3 GHz	20MB	8 GT/s	70 W	DDR3-1600	0A89434
	Xeon E5-2650	8	16	2 GHz	2.8 GHz	20MB	8 GT/s	95 W	DDR3-1600	0A89433
	Xeon E5-2643	4	8	3.3 GHz	3.5 GHz	10MB	8 GT/s	130 W	DDR3-1600	0A89440
	Xeon E5-2640	6	12	2.5 GHz	3 GHz	15MB	7.2 GT/s	95 W	DDR3-1333	0A89436
	Xeon E5-2630L	6	12	2 GHz	2.5 GHz		7.2 GT/s	60 W	DDR3-1333	
	Xeon E5-2630	6	12	2.3 GHz	2.8 GHz	15MB	7.2 GT/s	95 W	DDR3-1333	
	Xeon E5-2620	6	12	2 GHz	2.5 GHz	15MB	7.2 GT/s	95 W	DDR3-1333	
	Xeon E5-2609	4	4	2.4 GHz			6.4 GT/s	80 W	DDR3-1066	
	Xeon E5-2603	4	4	1.8 GHz		10MB	6.4 GT/s	80 W	DDR3-1066	0A89442
	Intel Xeon E5-2600		eries						T	1
	Xeon E5-2697 v2	12	24	2.7 GHz	1	30MB		130 W	DDR3-1866	
	Xeon E5-2695 v2	12	24	2.4 GHz	3.2 GHz	30MB	8 GT/s	115 W	DDR3-1866	
	Xeon E5-2690 v2	10	20	3 GHz	3.6 GHz	25MB		130 W	DDR3-1866	
	Xeon E5-2680 v2	10	20	2.8 GHz		25MB		115 W	DDR3-1866	
	Xeon E5-2670 v2	10	20	2.5 GHz	3.3 GHz	25MB		115 W	DDR3-1866	
	Xeon E5-2667 v2	8	16	3.3 GHz		25MB		130 W	DDR3-1866	
	Xeon E5-2660 v2	10	20	2.2 GHz	3 GHz	25MB		95 W	DDR3-1866	
	Xeon E5-2650 v2	8	16	2.6 GHz		20MB		95 W	DDR3-1866	
	Xeon E5-2650L v2	10	20	1.7 GHz	2.1 GHz		7.2 GT/s	70 W	DDR3-1600	
	Xeon E5-2640 v2	8	16	2 GHz	2.5 GHz		7.2 GT/s	95 W	DDR3-1600	
	Xeon E5-2630 v2	6 6	12 12	2.6 GHz 2.4 GHz	3.1 GHz 2.8 GHz		7.2 GT/s 7.2 GT/s	80 W	DDR3-1600 DDR3-1600	
	Xeon E5-2630L v2 Xeon E5-2620 v2	6	12	2.4 GHz			7.2 GT/s	60 W 80 W	DDR3-1600 DDR3-1600	
	Xeon E5-2609 v2	4	4	2.1 GHz	2.0 GHZ		6.4 GT/s	80 W	DDR3-1800	1
	Xeon E5-2603 v2	4	4	1.8 GHz			6.4 GT/s	80 W	DDR3-1333 DDR3-1333	
	Notes: All processors specifica Intel may update this in									nerein is pro
Memory type	RDIMM, DDR3, 4-ch	nannel	per proc	essor, 240	-pin					
Memory DIMM sockets	twenty DIMM socket	s (12	sockets fo	or CPU 1, 8	3 sockets fo	r CPU 2	)			
lemory capacity	Up to 320GB (16GB									
lemory protection	ECC, memory mirro	ring, n	nemory sp	paring						
				nory option				Part Numb		
	ThinkServer 4GB D	DR3L	-1600MH	z (1RX8) F	RDIMM			0C195	33	
	ThinkServer 8GB D	DR3L	-1600MH	z (2RX8) F	RDIMM			0C195	34	
Memory options	ThinkServer 16GB	DDR3	L-1600MI	Hz (2RX4)	RDIMM			0C195	35	
	Notes:  • Actual memory open: • By default, the voltag • When using Intel Xe	ge of LV on E5-2	/ RDIMM is 2600 series	1.5V and c processors	an be change s, LV RIMM is	ed to1.35 needed	V in BIOS so to run at 1.5	etting V to support	all 20 memory	

# ThinkServer RD540 Optional Configurations - Storage and RAID

Disk drive bays	Supports one of the follow • 8 x 3.5" SAS/SATA disl • 8 x 2.5" SAS/SATA disl • 16 x 2.5" SAS/SATA disl	k drive bays k drive bays								
		Disk dri	ive options			Part Number				
	Hot-swap Disk drive for 3	3.5" bay				•				
	3.5" SATA Hard Drive									
	ThinkServer 3.5" 500GB	7.2K Enterp	rise SATA 60	Sbps Hot S	wap Hard Drive	0A89473				
	ThinkServer 3.5" 1TB 7.2					0A89474				
	ThinkServer 3.5" 2TB 7.2				•	0A89475				
	ThinkServer 3.5" 3TB 7.2				•	0A89477				
	ThinkServer 3.5" 4TB 7.2				•	0C19520				
	3.5" SAS Hard Drive				,	10010020				
	ThinkServer 3.5" 1TB 7.2	PK SAS 6Gbr	ns Hot Swap	Hard Drive	e	0C19530				
	ThinkServer 3.5" 2TB 7.2					0C19531				
	ThinkServer 3.5" 3TB 7.2					0C19532				
	ThinkServer 3.5" 300GB					67Y2616				
	ThinkServer 3.5" 600GB									
	2.5" SSD for 3.5" disk ba		יחלים ו וחר פאויי	ap i iaiu Di	IVE	67Y2618				
Disk drive options		•	Calid State D	rivo to 2 El	' Kit	0010571				
	ThinkServer 2.5" 100GB					0C19571				
	ThinkServer 2.5" 200GB					0C19572				
	ThinkServer 2.5" 400GB		solid State D	rive to 3.5°	KIT	0C19573				
	Hot-swap Disk drive for 2	2.5" bay								
	2.5" SATA Hard Drive									
	ThinkServer 2.5" 500GB				•					
	ThinkServer 2.5" 1TB 7.2	2K Enterprise	SATA 6Gbp	s Hot Swa	p Hard Drive	0C19496				
	2.5" SAS Hard Drive									
			67Y2619							
	ThinkServer 2.5" 600GB		67Y2621							
	ThinkServer 2.5" 900GB	10K SAS 6G	abps Hot Swa	ap Hard Di	rive	0A89409				
	ThinkServer 2.5" 300GB	15K SAS 6G	Sbps Hot Swa	ap Hard Di	rive	0C19494				
	2.5" SSD									
	ThinkServer 2.5" 100GB	MLC SATA S	Solid State D	rive		0A89420				
	ThinkServer 2.5" 200GB	MLC SATA S	Solid State D	rive		0A89418				
	ThinkServer 2.5" 400GB	MLC SATA S	Solid State D	rive		0A89419				
	RAID adapter	RAID support	Device Support	Cache	Host bus type	Data transfer rates (per port)	Optional upgrades			
	ThinkServer RAID 500 (LSI® SAS 9240-8i)	0, 1, 10	SAS/SATA		PCI Express	6Gb/s	optional upgrade key, add RAID 5, 50 support			
RAID support	ThinkServer RAID 700 (LSI SAS 9260-8i)	0, 1, 10, 5, 50, 6, 60	SAS/SATA	512MB	PCI Express	6Gb/s	optional intelligent Battery Backup Unit (iBBU08)			
	ThinkServer RAID 710 (LSI SAS 9270CV-8i)	0, 1, 10, 5, 50, 6, 60	SAS/SATA	1GB	PCI Express	6Gb/s	optional CacheVault flash cache with super capacitor     optional CacheCade® Pro 2.0     optional FastPath			
	RAID	controller and	RAID upgra	de options		Part Number				
	ThinkServer RAID 500 A	danter II				0A89464				
	ThinkServer RAID 500 U	•	or Advanced	I RAID		0A89404 0A89407				
	ThinkServer RAID 700 A	, ,	0A89463							
AID options	ThinkServer RAID 700 A	•				67Y2647				
•										
	ThinkServer RAID 710 A	0C19489								
	ThinkServer RAID 710 S	0C19490								
		ThinkServer RAID 710 FastPath Software Key 0C1949								
	ThinkServer RAID 710 C	acheCade P	ro 2.0 Softwa	are Key		0C19492				

# ThinkServer RD540 Optional Configurations - Network, System Management, Power Supply

	Network and HBA options	Part Number					
	ThinkServer 1Gbps Ethernet I350-T2 Server Adapter by Intel	0C19506					
	ThinkServer 1Gbps Ethernet I350-T4 Server Adapter by Intel						
	Lenovo 10Gbps Ethernet X540-T2 Server Adapter by Intel	0C19497					
	Lenovo 10Gbps Ethernet X520-DA2 Server Adapter by Intel	0C19486					
Network options	Lenovo 10Gbps Ethernet Fiber Module by Intel	0C19488					
	Lenovo 10Gbps Ethernet X520-SR2 Server Adapter by Intel	0C19487					
	ThinkServer QLE8242-CU-CK Dual Port CNA by QLogic	0C19483					
	НВА						
	ThinkServer LPe1250 Single Port 8Gb Fibre Channel HBA by Emulex	0C19476					
	ThinkServer LPe12002 Dual Port 8Gb Fibre Channel HBA by Emulex	0C19478					
Coought entions	Trusted Platform Module options	Part Number					
Security options	ThinkServer Trusted Platform Module	0A89428					
Systems management	System Management options	Part Number					
Systems management options for iKVM	ThinkServer Management Module Premium	67Y2624					
Dower cumply entions	Power supply options	Part Number					
Power supply options	ThinkServer 800W Gold Hot Swap Redundant Power Supply for Rack						

### ThinkServer RD540 Services Upgrade Options

Partial list of Lenovo Services for ThinkServer RD540 with 3-year onsite base warranty models

For more information see: http://www.lenovo.com/services\_warranty/us/en/lenovo-warranty.html

Tof more information see. http://www.ienovo.com/services_warr	anty/us/en/lenot	′
Upgrade Service Description	Part Number	1
Warranty		(
3YR Onsite 24x7x4 Hour Response	5WS0F15458	,
3YR Onsite 24x7x8 Hour Response	5WS0F15392	
3YR Onsite 9x5x4 Hour Response	5WS0F15355	
4YR Onsite 24x7x4 Hour Response	5WS0F15443	•
4YR Onsite 24x7x8 Hour Response	5WS0F15395	
4YR Onsite 9x5x4 Hour Response	5WS0F15394	(
4YR Onsite NBD	5WS0F15415	•
5YR Onsite 24x7x4 Hour Response	5WS0F15377	١.
5YR Onsite 24x7x8 Hour Response	5WS0F15440	4
5YR Onsite 9x5x4 Hour Response	5WS0F15430	(
5YR Onsite NBD	5WS0F15419	
Keep Your Drive (KYD) Service	1	
3YR Keep Your Drive	5PS0F15436	1
3YR Onsite 24x7x4 Hour Response + KYD	5PS0F15376	ı
3YR Onsite 24x7x8 Hour Response + KYD	5PS0F15349	á
3YR Onsite 9x5x4 Hour Response + KYD	5PS0F15448	(
4YR Onsite 24x7x4 Hour Response + KYD	5PS0F15389	í
4YR Onsite 24x7x8 Hour Response + KYD	5PS0F15359	ı
4YR Onsite 9x5x4 Hour Response + KYD	5PS0F15456	ı
4YR Onsite NBD + KYD	5PS0F15459	
5YR Onsite 24x7x4 Hour Response + KYD	5PS0F15402	-
5YR Onsite 24x7x8 Hour Response + KYD	5PS0F15381	ı
5YR Onsite 9x5x4 Hour Response + KYD	5PS0F15366	i
5YR Onsite NBD + KYD	5PS0F15391	(
Priority Technical Support	EDC0E1E417	,
3YR KYD + Priority Support	5PS0F15417	Ι.
3YR Onsite 24x7x4 Hour Response + KYD + Priority Support	5PS0F15352	
3YR Onsite 24x7x4 Hour Response + Priority Support	5WS0F15399	
3YR Onsite 24x7x8 Hour Response + KYD + Priority Support	5PS0F15444 5WS0F15418	
3YR Onsite 24x7x8 Hour Response + Priority Support		
3YR Onsite 9x5x4 Hour Response + KYD + Priority Support	5PS0F15398	ł
3YR Onsite 9x5x4 Hour Response + Priority Support	5WS0F15468	ł
3YR Priority Support	5WS0E76471	
4YR Onsite 24x7x4 Hour Response + KYD + Priority Support	5PS0F15462	ł
4YR Onsite 24x7x4 Hour Response + Priority Support	5WS0F15410	
4YR Onsite 24x7x8 Hour Response + KYD + Priority Support	5PS0F15433	
4YR Onsite 24x7x8 Hour Response + Priority Support	5WS0F15425	
4YR Onsite 9x5x4 Hour Response + KYD + Priority Support 4YR Onsite 9x5x4 Hour Response + Priority Support	5PS0F15400 5WS0F15351	
4YR Onsite NBD + KYD + Priority Support	5PS0F15373	
4YR Onsite NBD + Priority Support	5WS0F15373	
4YR Priority Support	5WS0E77170	
5YR Onsite 24x7x4 Hour Response + KYD + Priority Support	5PS0F15350	
5YR Onsite 24x7x4 Hour Response + Priority Support	5WS0F15412	
5YR Onsite 24x7x4 Hour Response + KYD + Priority Support	5PS0F15471	
5YR Onsite 24x7x8 Hour Response + Priority Support	5WS0F15447	
5YR Onsite 9x5x4 Hour Response + KYD + Priority Support	5PS0F15437	
5YR Onsite 9x5x4 Hour Response + Priority Support	5WS0F15382	
5YR Onsite NBD + KYD + Priority Support	5PS0F15388	
5YR Onsite NBD + Priority Support	5WS0F15463	
5YR Priority Support	5WS0E77173	
Post Warranty	JVV30L77173	
1YR Onsite 24x7x4 Hour Response	5WS0F15435	
1YR Onsite 24x7x4 Hour Response + Priority Support	5WS0F15370	
1YR Onsite 24x7x4 Flour Flesponse 4 Findity Support	5WS0F15427	
1YR Onsite 24x7x8 Hour Response + Priority Support	5WS0F15361	
1YR Onsite 9x5x4 Hour Response	5WS0F15416	
1YR Onsite 9x5x4 Hour Response + Priority Support	5WS0F15348	
1YR Onsite NBD	5WS0F15407	
1YR Onsite NBD + Priority Support	5WS0F15465	
TopSeller Priority (TopSeller models only)	1 0 1 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1	
3YR Onsite 24x7x4 Hour Response	5WS0D73789	
3YR Onsite 9x5x4 Hour Response	5WS0D73787	
4YR Onsite 24x7x4 Hour Response	5WS0D73792	
4YR Onsite 9x5x4 Hour Response	5WS0D73791	
4YR Onsite NBD	5WS0F15470	
3YR Onsite 24x7x4 Hour Response+Priority Support	5WS0F15414	
3YR Onsite 9x5x4 Hour Response+Priority Support	5WS0F15423	
3YR Priority Support	5WS0E76457	
4YR Priority Support	5WS0E76482	
ouppoin	, 3552, 0702	ı

24x7x4: 4 Hour Onsite Response Time in 24x7 Service Window (requires Location Activation)

- 24 hours a day, 7 days a week, including nights and weekends
  Once the need for on-site presence is confirmed, an on-site technician is dispatched to arrive within 4 hours.
  Best coverage for business critical work loads

### 9x5x4: 4 Hour Onsite Response Time in 9x5 Service Window (requires Location Activation)

 Once the need for on-site presence is confirmed, an on-site technician is dispatched to arrive within 4 hours.

### 24x7x8: 8 Hour Onsite Response Time in 24x7 Service Window (requires Location Activation)

24 hours a day, 7 days a week, including nights and weekends Once the need for on-site presence is confirmed, an on-site technician is dispatched to arrive within 8 hours.

### **Priority Technical Support**

Lenovo's Priority Technical Support provides direct access to an advanced level technician supporting all of hardware, operating system and software needs related to server issues, available 24 hours a day, 7 days a week.

### Keep Your Drive (KYD) Service

Retain drive (hard drive or SSD) and confidential data if the drive must be replaced.

To confirm if 4hr services are available in a specified location, please use ThinkServer Service Availability Tool: http://www.lenovo.com/services\_warranty/us/en/locator.html Once purchased, to activate the location of your 4hr/8hr ThinkServer Service,

please use ThinkServer Service Activation page: http://www.lenovo.com/activation

## ThinkServer RD540 (70AT) - TopSeller

Type-	Intel Xeon		Disk	RAID		Slim	Intelligent	Remote	Discrete	Cable		Windows Server 2012	Base on-site warranty
model <sup>1</sup>	Processor(s)	Memory	Bays	controller	Storage	optical	Diagnostics	mgmt	ethernet	mgmt	PSU	Preloaded	(-year)
70AT0004UX	1xE5-2620 v2 6C/2.1GHz/ 15MB/1600MHz	8GBx1	4x3.5"	RAID710	Open	DVD±RW	No	IPMI	No	No	800Wx1	No	3
70AT0008UX	10MB/1333MHz	4GBx1	4x3.5"	RAID500	Open	DVD±RW	No	IPMI	No	No	800Wx1	No	3
70AT0009UX	1xE5-2609 v2 4C/2.5GHz/ 10MB/1333MHz	8GBx1	4x3.5"	RAID500	Open	DVD±RW	No	IPMI	No	No	800Wx1	No	3
70AT000BU>	15MB/1600MHz	8GBx1	4x3.5"	RAID700	Open	DVD±RW	No	IPMI	No	No	800Wx1	No	3
70AT000CU	1xE5-2650L v2 (10C/1.7GHz/ 25MB/1600MHz	8GBx1	4x3.5"	RAID700	Open	DVD±RW	No	IPMI	No	No	800Wx1	No	3
70AT000AU>	1xE5-2609 v2 4C/2.5GHz/ 10MB/1333MHz	8GBx1	4x3.5"	RAID700	Open	DVD±RW	No	IPMI	No	No	800Wx1	No	3
70AT0006UX	2xE5-2630 v2 6C/2.6GHz/ 15MB/1600MHz	16Gx4	4x3.5"	RAID700 +Battery	3x500GB 3.5" SATA(RAID5)	DVD	No	iKVM	350T4	Cable	800Wx2	No	1
70AT0005US	2xE5-2650 v2 8C/2.6GHz/ 20MB/1866MHz	4GBx20	4x3.5"	RAID710 +CacheVault +CacheCade	2x400GB SSD(cache,RAID1) +2x3TB 3.5" SAS (RAID1)		No	iKVM	X520SR2	Cable	800Wx2	Standard	1

Model in italics is Global 2. 8 x 2.5" disk bays models do not support optical bay, external USB optical is needed

- For detailed platform specifications, please see <u>ThinkServer RD540 Platform Specifications</u> sheets
   For optional configurations of <u>ThinkServer RD540</u>, please see <u>ThinkServer RD540 Optional Configurations sheets</u>

Chipset	Intel C602J Chip	set, two L	GA2011	sockets	for processors	2U Rack top			
Memory type	RDIMM, DDR3, 4	4-channel	per prod	cessor, 2	40-pin				
Memory DIMMs	Twenty DIMM so	ckets (12	sockets	for CPU	1, 8 sockets for CPU 2)	Power supply Power supply Riser card 2 Riser card 2			
Memory protection	ECC, memory m	irroring, n	nemory s	sparing		r sup			
Disk drive bays	Supports 4 x 3.5	" or 8 x 2.	5" disk d	Irive bays	S				
	RAID adapter*	RAID support	Cache	Transfer rates	Memory sockets				
	RAID 500 (LSI® 9240-8i)	0, 1, 10		6Gb/s	optional upgrade key, add RAID 5, 50 support	ockets  OPU1  OPU1  OCKets  OC			
DAID assessed	RAID 700 (LSI 9260-8i)	0, 1, 10, 5, 50, 6, 60	512MB	optional intelligent Battery Backup Unit (iBBU08)	fan fan fan fan fan				
RAID support	RAID 710 (LSI 9270CV-8i)	0, 1, 10, 5, 50, 6, 60	1GB	6Gb/s	Front - 3.5" bay    Optical   Coptical   Cop				
	* All RAID adap	30 are sup	ported o	on 8x2.5'	Front - 2.5" bay				
Optical (optional)					ROM, slim, SATA interface onal external USB optical				
Onboard network	Three onboard G Two Gigabit Ethe	ligabit Éth rnet ports	ernet po by Intel	orts (RJ-4 ⊢i350;		Rear			
Discrete network (optional)	<ul><li>Intel Ethernet</li><li>Intel Ethernet</li><li>Intel 10Gbps</li><li>Intel 10Gbps</li></ul>	Server A Server A Ethernet : Ethernet : Ethernet	dapter 13 dapter 13 X520-SF X520-DA Fiber Mo	350-T2 350-T4 R2 Serve A2 Serve	r adapter r adapter X520-DA2 adapter	PSU PSU 2-PCle x8 1-PCle x16 1			
Intelligent Diagnostics Module (IDM, opt)	Supports IDM on IDM LED lights in	ndicate fai	ling com	ponent o	0 ,	Front and Rear Ports Front: 2 USB 2.0 1 VGA (for 8x2.5" disk bays models)			
Security features	Power-on passwo Trusted Platform	ord/admin	istrator p	oassword	d,	Rear: 4 USB 2.0 1 serial (9-pin)			
Systems management	Onboard Aspelled IPMI 2.0-compoptional Think	eed AST2 pliant bas Server M	2300 gra eboard r anagem	phics/ma managen ent Modi	2 ethernet (RJ-45) 1 RJ-45 (dedicate/share mgmt) 1 VGA				
(Optional iKVM)	Lenovo Smarr	tGrid Mar	nager		Expansion Slots				
Cable mgmt (opt)	<ul> <li>ThinkServer E</li> <li>Optional cable m</li> </ul>				Slot 1: half-length, full-height, PCI Express 3.0 x16 Slot 2: Low Profile, PCI Express 3.0 x8				
	One or two 800 v	vatts stan	dard, two	o maximi	Mechanical				
Power supply Environmental certifications	Energy Star S     RoHS-complia     More environmen     ThinkServer RD540 Pl	Server 2.0 ant ntal inform	qualified	d	o power supplies	1U rack     19"W x 28.9"D x 1.72"H (with rack handles)     482.4mm W x 734mm D x 43.6mm H     (with rack handles)     17kg (37.5 lb) when fully configured			

													Windows Server	Base on-site
	Type-	Intel Xeon		Disk	RAID		Slim	Intelligent	Remote	Discrete	Cable		2012	warranty
	model <sup>1</sup>	Processor(s)	Memory	Bays	controller	Storage	optical	Diagnostics	mgmt	ethernet	mgmt	PSU	Preloaded	(-year)
-	OAT000UUX	Xeon E5-2630 v2 6C/2.6GHz/15MB/1600MHz	8GBx1 1600MHz	4x3.5"	RAID700	Open	DVD±RW	No	IPMI	No	No	800Wx1	No	3

Model in italics is Global 2. 8 x 2.5" disk bays models do not support optical bay, external USB optical is needed

- For detailed platform specifications, please see <u>ThinkServer RD540 Platform Specifications</u> sheets
   For optional configurations of <u>ThinkServer RD540</u>, please see <u>ThinkServer RD540 Optional Configurations sheets</u>

Chipset	Intel C602J Chip	set, two L	.GA2011	sockets	for processors	2U Rack top
Memory type	RDIMM, DDR3, 4	4-channel	per pro	cessor, 2	40-pin	
Memory DIMMs	Twenty DIMM so	ckets (12	sockets	for CPU	1, 8 sockets for CPU 2)	Power supply Power supply Power supply Riser card 2 Riser card 2
Memory protection	ECC, memory m	irroring, n	nemory	sparing		r sup
Disk drive bays	Supports 4 x 3.5	or 8 x 2.	5" disk c	rive bays	3	
	RAID adapter*	RAID support	Cache	Transfer rates		
	RAID 500 (LSI® 9240-8i)	0, 1, 10		6Gb/s	optional upgrade key, add RAID 5, 50 support	well and the state of the state
DAID	RAID 700 (LSI 9260-8i)	0, 1, 10, 5, 50, 6, 60	512MB	6Gb/s	fan fan fan fan fan	
RAID support	RAID 710 (LSI 9270CV-8i)	0, 1, 10, 5, 50, 6, 60	1GB	6Gb/s	Front - 3.5" bay    Optical	
	* All RAID adap ** RAID 50 and 6	30 are sup	oported (	on 8x2.5'	Front - 2.5" bay	
Optical (optional)					ROM, slim, SATA interface onal external USB optical	
Onboard network	Three onboard G Two Gigabit Ethe	ligabit Eth	nernet po	orts (RJ-4 I i350;		Rear
Discrete network (optional)	<ul><li>Intel Ethernet</li><li>Intel Ethernet</li><li>Intel 10Gbps</li><li>Intel 10Gbps</li></ul>	Server A Server A Ethernet Ethernet Ethernet	dapter lå dapter lå X520-SF X520-DÆ Fiber Mo	350-T2 350-T4 R2 Serve A2 Serve	r adapter r adapter X520-DA2 adapter	PSU PSU 2-PCle x8 1-PCle x16 1
Intelligent Diagnostics Module (IDM, opt)	Supports IDM on IDM LED lights in				category,	Front and Rear Ports Front: 2 USB 2.0 1 VGA (for 8x2.5" disk bays models)
Security features	Power-on passwo Trusted Platform					Rear: 4 USB 2.0 1 serial (9-pin)
Systems management	Onboard Asporting     IPMI 2.0-compoptional Think     Control Panel	eed AST2 pliant bas Server M	2300 gra eboard i anagem	phics/ma managen ent Modi	2 ethernet (RJ-45) 1 RJ-45 (dedicate/share mgmt) 1 VGA	
(Optional iKVM)	<ul> <li>Lenovo Smar</li> </ul>	tGrid Mar	nager		Expansion Slots	
Cable mgmt (opt)	<ul> <li>ThinkServer E</li> <li>Optional cable m</li> </ul>				Slot 1: half-length, full-height, PCI Express 3.0 x16 Slot 2: Low Profile, PCI Express 3.0 x8	
Power supply	One or two 800 v 80 PLUS® Gold of	vatts stan	dard. tw	o maximi	Mechanical a 111 rock	
Environmental certifications	Energy Star S     RoHS-complia     More environmer     ThinkServer RD540 Pi	Server 2.0 ant	qualifie	d		<ul> <li>1U rack</li> <li>19"W x 28.9"D x 1.72"H (with rack handles)</li> <li>482.4mm W x 734mm D x 43.6mm H (with rack handles)</li> <li>17kg (37.5 lb) when fully configured</li> </ul>

## ThinkServer RD540 (70AU) - TopSeller

												Windows Server	Base on-site
Type- model <sup>1</sup>	Intel Xeon Processor(s)	Memory	Disk Bays	RAID controller	Storage	Slim optical	Intelligent Diagnostics		Discrete ethernet	Cable		2012 Preloaded	warranty (-year)
70AU000CUX	1xE5-2620 v2 6C/2.1GHz/ 15MB/1600MHz	8GBx1	8x2.5"	RAID500	Open	No	No	IPMI	No	No	800Wx1	No	3
70AU000SUX	1xE5-2609 v2 4C/2.5GHz/ 10MB/1333MHz	8GBx1	8x2.5"	RAID700	Open	No	No	IPMI	No	No	800Wx1	No	3
70AU000TUX	1xE5-2620 v2 6C/2.1GHz/ 15MB/1600MHz	8GBx1	8x2.5"	RAID700	Open	No	No	IPMI	No	No	800Wx1	No	3
70AU000UUX	1xE5-2640 v2 8C/2GHz/ 20MB/1600MHz	8GBx1	8x2.5"	RAID700	Open	No	No	IPMI	No	No	800Wx1	No	3
	1xE5-2650 v2 8C/2.6GHz/ 20MB/1866MHz	8GBx1	8x2.5"	RAID700	Open	No	No	IPMI	No	No	800Wx1	No	3
70AU000WUX	25MB/1866MHz	8GBx1	8x2.5"	RAID700	Open	No	No	IPMI	No	No	800Wx1	No	3

<sup>1.</sup> Model in italics is Global 2. 8 x 2.5" disk bays models do not support optical bay, external USB optical is needed

- For detailed platform specifications, please see <u>ThinkServer RD540 Platform Specifications</u> sheets
   For optional configurations of <u>ThinkServer RD540</u>, please see <u>ThinkServer RD540 Optional Configurations sheets</u>

Chipset	Intel C602J Chips	set, two L	GA2011	sockets	for processors	2U Rack top			
Memory type	RDIMM, DDR3, 4	1-channel	per prod	essor, 2	40-pin	3. ■ 3. ■ 3.			
Memory DIMMs	Twenty DIMM soo	ckets (12	sockets	for CPU	1, 8 sockets for CPU 2)	Power supply Power supply Power supply Power supply Paiser card 2 Riser card 2 Riser card 1			
Memory protection	ECC, memory mi	rroring, n	nemory s	paring		r sup			
Disk drive bays	Supports 4 x 3.5"	or 8 x 2.	5" disk d	rive bays	S				
	RAID adapter*	RAID support	Cache	Transfer rates	Optional upgrades				
	RAID 500 (LSI® 9240-8i)	0, 1, 10		6Gb/s	optional upgrade key, add RAID 5, 50 support	Memory Societs Societs Societs Societs Societs Societs Societs Societs			
DAID	RAID 700 (LSI 9260-8i)	0, 1, 10, 5, 50, 6, 60	512MB	6Gb/s	optional intelligent Battery Backup Unit (iBBU08)	fan fan fan fan fan			
RAID support	RAID 710 (LSI 9270CV-8i)	0, 1, 10, 5, 50, 6, 60	1GB	6Gb/s	Front - 3.5" bay    Optical   Click   disk   disk				
		0 are sup	oported o	n 8x2.5'	disk bays models	Front - 2.5" bay			
Optical (optional)	4x3.5" bay model 8x2.5" bay model								
Onboard network	Three onboard G Two Gigabit Ethe one Gigabit Ethe	igabit Éth rnet ports	nernet po s by Intel	orts (RJ-4 i350;	Rear				
Discrete network (optional)	<ul><li>Intel Ethernet</li><li>Intel Ethernet</li><li>Intel 10Gbps I</li><li>Intel 10Gbps I</li></ul>	Server A Server A Ethernet Ethernet Ethernet	dapter 13 dapter 13 X520-SF X520-DA Fiber Mo	350-T2 350-T4 32 Serve 32 Serve	r adapter r adapter X520-DA2 adapter	PSU PSU 2-PCle x8 1-PCle x16			
Intelligent Diagnostics Module (IDM, opt)	Supports IDM on IDM LED lights in			ponent o	category,	Front and Rear Ports Front: 2 USB 2.0 1 VGA (for 8x2.5" disk bays models)			
Security features Systems management	Power-on passwortrusted Platform  Onboard AspelliPMI 2.0-compoptional Think	Module ( eed AST2 pliant bas Server M	TCG 1.2 2300 grap eboard r anagem	-complia ohics/ma nanagen ent Modu	Rear: 4 USB 2.0  1 serial (9-pin) 2 ethernet (RJ-45) 1 RJ-45 (dedicate/share mgmt) 1 VGA				
(Optional iKVM)	<ul><li>Control Panel</li><li>Lenovo Smari</li><li>ThinkServer E</li></ul>	tGrid Mar	nager		Expansion Slots  Slot 1: half-length, full-height, PCI Express 3.0 x1				
Cable mgmt (opt)	Optional cable ma	0			Slot 2: Low Profile, PCI Express 3.0 x8				
Power supply	One or two 800 w 80 PLUS® Gold of	vatts stan ıualified. ı	dard, two edundar	maximint with tw	Mechanical  • 1U rack				
Environmental certifications	Energy Star S     RoHS-complia More environmen ThinkServer RD540 Plane	Server 2.0 ant ntal inform	qualified	t	10 rack     19"W x 28.9"D x 1.72"H (with rack handles)     482.4mm W x 734mm D x 43.6mm H     (with rack handles)     17kg (37.5 lb) when fully configured				

## ThinkServer RD540 (70AU) - TopSeller - II

Type-	Intel Xeon		Disk	RAID		Slim	Intelligent	Remote	Discrete	Cable		Windows Server 2012	Base on-site warranty
model <sup>1</sup>	Processor(s)	Memory	Bays	controller	Storage		Diagnostics		ethernet	mgmt	PSU	Preloaded	
70AU000XUX	1xE5-2620 v2 6C/2.1GHz/ 15MB/1600MHz	8GBx1	8x2.5"	RAID710 +CacheVault	Open	No	No	iKVM	No	No	800Wx2	No	3
70AU000YUX	1xE5-2670 v2 10C/2.5GHz/ 25MB/1866MHz	8GBx1	8x2.5"	RAID710 +FastPath	Open	No	No	iKVM	No	No	800Wx2	No	3
70AU000FUX	2xE5-2690 v2 10C/3GHz/ 25MB/1866MHz	4GBx2	8x2.5"	RAID700	2x500GB 2.5" SATA(RAID1)	No	No	IPMI	350T2	No	800Wx2	No	1
70AU000DUS	2xE5-2660 v2 10C/2.2GHz/ 25MB/1866MHz	8GBx20	8x2.5"	RAID500 +upgrade	2x300GB 2.5" SAS(RAID1) +6x300GB 2.5" SAS(RAID50)	No	No	iKVM	X520SR2	Cable	800Wx2	Standard	1
70AU000EUX	1xE5-2620 v2 6C/2.1GHz/ 15MB/1600MHz	16Gx4	8x2.5"	RAID710 +FastPath	6x100GB SSD(RAID50)	No	No	IPMI	350T4	No	800Wx2	No	1

- For detailed platform specifications, please see <u>ThinkServer RD540 Platform Specifications</u> sheets
   For optional configurations of ThinkServer RD540, please see <u>ThinkServer RD540 Optional Configurations sheets</u>

Chipset	Intel C602J Chip	set, two L	.GA2011	sockets	for processors	2U Rack top			
Memory type	RDIMM, DDR3, 4	1-channe	per pro	cessor, 2	40-pin				
Memory DIMMs	Twenty DIMM so	ckets (12	sockets	for CPU	1, 8 sockets for CPU 2)	Power supply Power supply Riser card 2 Riser card 2			
Memory protection	ECC, memory m	rroring, n	nemory	sparing		rd 2 rd 2			
Disk drive bays	Supports 4 x 3.5	or 8 x 2.	5" disk c	drive bays	8	J oly J oly			
	RAID adapter*	RAID support	Cache	Transfer rates	Optional upgrades	Memory Sockets Society			
	RAID 500 (LSI® 9240-8i)	0, 1, 10		6Gb/s	optional upgrade key, add RAID 5, 50 support	CPU1  CPU1  CPU1  CPU2  CPU3			
DAID	RAID 700 (LSI 9260-8i)	0, 1, 10, 5, 50, 6, 60	512MB	6Gb/s	optional intelligent Battery Backup Unit (iBBU08)	fan fan fan fan fan			
RAID support	RAID 710 (LSI 9270CV-8i)	0, 1, 10, 5, 50, 6, 60	1GB	6Gb/s	Front - 3.5" bay  optical disk   disk   disk   disk				
	* All RAID adap				TA drives ' disk bays models	Front - 2.5" bay			
Optical (optional)					ROM, slim, SATA interface onal external USB optical				
Onboard network	Three onboard G Two Gigabit Ethe	igabit Éth rnet ports	nernet po s by Intel	orts (RJ-4 Li350;		Rear			
Discrete network (optional)	<ul><li>Intel Ethernet</li><li>Intel Ethernet</li><li>Intel 10Gbps</li><li>Intel 10Gbps</li></ul>	Server A Server A Ethernet Ethernet Ethernet	dapter 13 dapter 13 X520-SF X520-DA Fiber Mo	350-T2 350-T4 R2 Serve A2 Serve	r adapter r adapter X520-DA2 adapter	PSU PSU 2-PCle x8 1-PCle x16			
Intelligent Diagnostics Module (IDM, opt)	Supports IDM on IDM LED lights in				category,	Front: 2 USB 2.0			
Security features	<ul> <li>Onboard Aspending</li> </ul>	Module ( <u>es not inc</u> eed AST2	TCG 1.2 <u>cluded T</u> 2300 gra	-complia <i>PM, addi</i> phics/ma	nt) tional TPM option is needed inagement processor.	1 VGA (for 8x2.5" disk bays models) Rear: 4 USB 2.0 1 serial (9-pin) 2 ethernet (RJ-45) 1 RJ-45 (dedicate/share mgmt)			
Systems management	optional Think	Server M	lanagem	ent Modu	nent controller (BMC); ule Premium for iKVM functions power, ID, network, system	1 VGA  Expansion Slots			
(Optional iKVM)	<ul><li>Lenovo Smar</li><li>ThinkServer E</li></ul>	tGrid Mar	nager		Slot 1: half-length, full-height, PCI Express 3.0 x16				
Cable mgmt (opt)	Optional cable m					Slot 2: Low Profile, PCI Express 3.0 x8  Mechanical			
Power supply	One or two 800 v 80 PLUS® Gold o	vatts stan Jualified,	dard, two	o maximint with tw	• 1U rack				
Environmental certifications	Energy Star S     RoHS-complia     More environmer     ThinkServer RD540 Pl	Server 2.0 ant	qualifie	d		19"W x 28.9"D x 1.72"H (with rack handles)     482.4mm W x 734mm D x 43.6mm H     (with rack handles)     17kg (37.5 lb) when fully configured			

<sup>1.</sup> Model in italics is Global 2. 8 x 2.5" disk bays models do not support optical bay, external USB optical is needed

## ThinkServer RD540 (70AU) - TopSeller (August 2014)

Product Specifications Reference (PSREF)

												Windows	Base
												Server	on-site
Type-	Intel Xeon		Disk	RAID		Slim	Intelligent	Remote	Discrete	Cable		2012	warranty
model <sup>1</sup>	Processor(s)	Memory	Bays	controller	Storage	optical	Diagnostics	mgmt	ethernet	mgmt	PSU	Preloaded	(-year)
70AU0027UX	Xeon E5-2630 v2 6C/2.6GHz/15MB/1600MHz	8GBx1 1600MHz	8x2.5	RAID700	Open	No	No	IPMI	No	No	800Wx1	No	3

Model in italics is Global 2. 8 x 2.5" disk bays models do not support optical bay, external USB optical is needed

- For detailed platform specifications, please see <u>ThinkServer RD540 Platform Specifications</u> sheets
   For optional configurations of ThinkServer RD540, please see <u>ThinkServer RD540 Optional Configurations sheets</u>

Chipset	Intel C602J Chip	set, two L	GA2011	sockets	for processors	2U Rack top					
Memory type	RDIMM, DDR3, 4	4-channel	per prod	cessor, 2	40-pin						
Memory DIMMs	Twenty DIMM so	ckets (12	sockets	for CPU	1, 8 sockets for CPU 2)	Power supply Power supply Riser card 2 Riser card 2					
Memory protection	ECC, memory m	irroring, n	nemory s	sparing		r sup					
Disk drive bays	Supports 4 x 3.5	" or 8 x 2.	5" disk d	Irive bays	S						
	RAID adapter*	RAID support	Cache	Transfer rates	Optional upgrades	Memory sockets					
	RAID 500 (LSI® 9240-8i)	0, 1, 10		6Gb/s	optional upgrade key, add RAID 5, 50 support	ockets  OPU1  OPU1  OCKets  OC					
DAID assessed	RAID 700 (LSI 9260-8i)	0, 1, 10, 5, 50, 6, 60	512MB	6Gb/s	optional intelligent Battery Backup Unit (iBBU08)	fan fan fan fan fan					
RAID support	RAID 710 (LSI 9270CV-8i)	0, 1, 10, 5, 50, 6, 60	1GB	Front - 3.5" bay    Optical   Coptical   Cop							
		30 are sup	ported o	on 8x2.5'	' disk bays models	Front - 2.5" bay					
Optical (optional)					ROM, slim, SATA interface onal external USB optical						
Onboard network	Three onboard G Two Gigabit Ethe	ligabit Éth rnet ports	ernet po by Intel	orts (RJ-4 ⊢i350;		Rear					
Discrete network (optional)	<ul><li>Intel Ethernet</li><li>Intel Ethernet</li><li>Intel 10Gbps</li><li>Intel 10Gbps</li></ul>	Server A Server A Ethernet : Ethernet : Ethernet	dapter 13 dapter 13 X520-SF X520-DA Fiber Mo	350-T2 350-T4 R2 Serve A2 Serve	r adapter r adapter X520-DA2 adapter	PSU PSU 2-PCle x8 1-PCle x16 1					
Intelligent Diagnostics Module (IDM, opt)	Supports IDM on IDM LED lights in	ndicate fai	ling com	ponent o	0 ,	Front and Rear Ports Front: 2 USB 2.0 1 VGA (for 8x2.5" disk bays models)					
Security features	Power-on passwo Trusted Platform	ord/admin	istrator p	oassword	d,	Rear: 4 USB 2.0 1 serial (9-pin)					
Systems management	Onboard Aspelled IPMI 2.0-compoptional Think	eed AST2 pliant bas Server M	2300 gra eboard r anagem	phics/ma managen ent Modi	nagement processor, nent controller (BMC); ule Premium for iKVM functions	2 ethernet (RJ-45) 1 RJ-45 (dedicate/share mgmt) 1 VGA					
(Optional iKVM)	<ul> <li>Lenovo Smar</li> </ul>	tGrid Mar	nager		power, ID, network, system	Expansion Slots					
Cable mgmt (opt)	<ul> <li>ThinkServer E</li> <li>Optional cable m</li> </ul>				Slot 1: half-length, full-height, PCI Express 3.0 x16 Slot 2: Low Profile, PCI Express 3.0 x8						
	One or two 800 v	vatts stan	dard, two	o maximi	um, rear access, hot-swap,	Mechanical					
Power supply Environmental certifications	Energy Star S     RoHS-complia     More environmen     ThinkServer RD540 Pl	Server 2.0 ant ntal inform	qualified	d	1U rack     19"W x 28.9"D x 1.72"H (with rack handles)     482.4mm W x 734mm D x 43.6mm H     (with rack handles)     17kg (37.5 lb) when fully configured						

## ThinkServer RD540 (70AR)

Type- model <sup>1</sup>	Intel Xeon Processor(s)	Memory	Disk Bays	RAID controller	Storage	Slim optical	Intelligent Diagnostics		Discrete ethernet			Windows Server 2012 Preloaded	Base on-site warranty (-year)
70AR0000UX	1xE5-2620 v2 6C/2.1GHz/ 15MB/1600MHz	8GBx1	4x3.5"	RAID500	Open	DVD±RW	No	IPMI	No	No	800Wx1	No	3
70AR0001UX	1xE5-2620 v2 6C/2.1GHz/ 15MB/1600MHz	8GBx1	4x3.5"	RAID500	Open	DVD±RW	No	IPMI	No	No	800Wx1	No	3

<sup>1.</sup> Model in italics is Global 2. 8 x 2.5" disk bays models do not support optical bay, external USB optical is needed

- For detailed platform specifications, please see <u>ThinkServer RD540 Platform Specifications</u> sheets
   For optional configurations of ThinkServer RD540, please see <u>ThinkServer RD540 Optional Configurations sheets</u>

Chipset	Intel C602J Chip	set, two L	.GA2011	sockets	for processors	2U Rack top
Memory type	RDIMM, DDR3, 4	4-channe	per prod	essor, 2	40-pin	
Memory DIMMs	Twenty DIMM so	ckets (12	sockets	for CPU	1, 8 sockets for CPU 2)	Power supply Power supply Power supply Riser card 2 Riser card 2
Memory protection	ECC, memory m	irroring, n	nemory s	paring		r sup
Disk drive bays	Supports 4 x 3.5	or 8 x 2.	5" disk d	rive bays	6	
	RAID adapter*	RAID support	Cache	Transfer rates	Optional upgrades	
	RAID 500 (LSI® 9240-8i)	0, 1, 10		6Gb/s	optional upgrade key, add RAID 5, 50 support	Memory Societs Societs Societs Societs Societs Societs Societs
	RAID 700 (LSI 9260-8i)	0, 1, 10, 5, 50, 6, 60	512MB	6Gb/s	optional intelligent Battery Backup Unit (iBBU08)	fan fan fan fan fan
RAID support	RAID 710 (LSI 9270CV-8i)	0, 1, 10, 5, 50, 6, 60	1GB	6Gb/s	optional CacheVault (CV) flash cache with super capacitor     optional CacheCade® Pro 2.0     optional FastPath key	Front - 3.5" bay    Optical   Color   Color
		30 are su	oported o	n 8x2.5'	' disk bays models	Front - 2.5" bay
Optical (optional)	4x3.5" bay mode	ls: one D	/D±RW ( ical bay	or DVD F	ROM, slim, SATA interface onal external USB optical	©∘ □□□ ፡፡፡፡ disk disk disk  disk disk disk disk disk
Onboard network	Three onboard G Two Gigabit Ethe	ligabit Éth rnet port	nernet po s by Intel	rts (RJ-4 i350;	45): dedicate/share management	Rear
Discrete network (optional)	<ul><li>Intel Ethernet</li><li>Intel Ethernet</li><li>Intel 10Gbps</li><li>Intel 10Gbps</li></ul>	Server A Server A Ethernet Ethernet Ethernet	dapter 13 dapter 13 X520-SF X520-DA Fiber Mo	350-T2 350-T4 32 Serve 32 Serve	r adapter r adapter X520-DA2 adapter	PSU PSU 2-PCle x6
Intelligent Diagnostics Module (IDM, opt)	Supports IDM on IDM LED lights in			ponent o	category,	Front and Rear Ports Front: 2 USB 2.0 1 VGA (for 8x2.5" disk bays models)
Security features	Power-on passwo Trusted Platform					Rear: 4 USB 2.0 1 serial (9-pin)
Systems management	Onboard Aspelled IPMI 2.0-compoptional Think	eed AST2 pliant bas Server M	2300 gra eboard r anagem	ohics/ma nanagen ent Modu	ingement processor, nent controller (BMC); lle Premium for iKVM functions power, ID, network, system	2 ethernet (RJ-45) 1 RJ-45 (dedicate/share mgmt) 1 VGA
(Optional iKVM)	<ul><li>Lenovo Smar</li><li>ThinkServer E</li></ul>	tGrid Mar	nager			Expansion Slots Slot 1: half-length, full-height, PCI Express 3.0 x16
Cable mgmt (opt)	Optional cable m					Slot 2: Low Profile, PCI Express 3.0 x8
Power supply	One or two 800 v	vatts stan	dard, two	maxim	um, rear access, hot-swap, o power supplies	Mechanical  • 1U rack
Environmental certifications	Energy Star S     RoHS-complia     More environmer     ThinkServer RD540 Pt	Server 2.0 ant	qualifie	t		10 rack     19"D x 1.72"H (with rack handles)     482.4mm W x 734mm D x 43.6mm H     (with rack handles)     17kg (37.5 lb) when fully configured

## ThinkServer RD540 (70AS)

Type- model <sup>1</sup>	Intel Xeon Processor(s)	Memory	Disk Bays	RAID controller	Storage	Slim optical	Intelligent Diagnostics		Discrete ethernet	Cable mgmt	PSU	Windows Server 2012 Preloaded	Base on-site warranty (-year)
70AS0008UX	1xE5-2620 v2 6C/2.1GHz/ 15MB/1600MHz	8GBx1	8x2.5"	RAID500	Open	No	No	IPMI	No	No	800Wx1	No	3
70AS000GUX	1xE5-2620 v2 6C/2.1GHz/ 15MB/1600MHz	8GBx1	8x2.5"	RAID700	Open	No	No	iKVM	No	No	800Wx1	No	3

<sup>2. 8</sup> x 2.5" disk bays models do not support optical bay, external USB optical is needed Model in italics is Global

- For detailed platform specifications, please see <u>ThinkServer RD540 Platform Specifications</u> sheets
   For optional configurations of <u>ThinkServer RD540</u>, please see <u>ThinkServer RD540 Optional Configurations sheets</u>

Chipset	Intel C602J Chip	set, two L	.GA2011	sockets	for processors	2U Rack top
Memory type	RDIMM, DDR3, 4	4-channe	per prod	essor, 2	40-pin	
Memory DIMMs	Twenty DIMM so	ckets (12	sockets	for CPU	1, 8 sockets for CPU 2)	Power supply Power supply Power supply Riser card 2 Riser card 2
Memory protection	ECC, memory m	irroring, n	nemory s	paring		r sup
Disk drive bays	Supports 4 x 3.5	or 8 x 2.	5" disk d	rive bays	6	
	RAID adapter*	RAID support	Cache	Transfer rates	Optional upgrades	
	RAID 500 (LSI® 9240-8i)	0, 1, 10		6Gb/s	optional upgrade key, add RAID 5, 50 support	Memory Societs Societ Soc
	RAID 700 (LSI 9260-8i)	0, 1, 10, 5, 50, 6, 60	512MB	6Gb/s	optional intelligent Battery Backup Unit (iBBU08)	fan fan fan fan fan
RAID support	RAID 710 (LSI 9270CV-8i)	0, 1, 10, 5, 50, 6, 60	1GB	6Gb/s	optional CacheVault (CV) flash cache with super capacitor     optional CacheCade® Pro 2.0     optional FastPath key	Front - 3.5" bay    Optical   Color
		30 are su	oported o	n 8x2.5'	' disk bays models	Front - 2.5" bay
Optical (optional)	4x3.5" bay mode	ls: one D	/D±RW ( ical bay	or DVD F	ROM, slim, SATA interface onal external USB optical	©∘ □□□ ፡፡፡፡ disk disk disk  disk disk disk disk disk
Onboard network	Three onboard G Two Gigabit Ethe	ligabit Éth rnet port	nernet po s by Intel	rts (RJ-4 i350;	45): dedicate/share management	Rear
Discrete network (optional)	<ul><li>Intel Ethernet</li><li>Intel Ethernet</li><li>Intel 10Gbps</li><li>Intel 10Gbps</li></ul>	Server A Server A Ethernet Ethernet Ethernet	dapter 13 dapter 13 X520-SF X520-DA Fiber Mo	350-T2 350-T4 32 Serve 32 Serve	r adapter r adapter X520-DA2 adapter	PSU PSU 2-PCle x6
Intelligent Diagnostics Module (IDM, opt)	Supports IDM on IDM LED lights in			ponent o	category,	Front and Rear Ports Front: 2 USB 2.0 1 VGA (for 8x2.5" disk bays models)
Security features	Power-on passwo Trusted Platform					Rear: 4 USB 2.0 1 serial (9-pin)
Systems management	Onboard Aspelled IPMI 2.0-compoptional Think	eed AST2 pliant bas Server M	2300 gra eboard r anagem	ohics/ma nanagen ent Modu	ingement processor, nent controller (BMC); lle Premium for iKVM functions power, ID, network, system	2 ethernet (RJ-45) 1 RJ-45 (dedicate/share mgmt) 1 VGA
(Optional iKVM)	<ul><li>Lenovo Smar</li><li>ThinkServer E</li></ul>	tGrid Mar	nager			Expansion Slots Slot 1: half-length, full-height, PCI Express 3.0 x16
Cable mgmt (opt)	Optional cable m					Slot 2: Low Profile, PCI Express 3.0 x8
Power supply	One or two 800 v	vatts stan	dard, two	maxim	um, rear access, hot-swap, o power supplies	Mechanical  • 1U rack
Environmental certifications	Energy Star S     RoHS-complia     More environmer     ThinkServer RD540 Pt	Server 2.0 ant	qualifie	t		10 rack     19"D x 1.72"H (with rack handles)     482.4mm W x 734mm D x 43.6mm H     (with rack handles)     17kg (37.5 lb) when fully configured

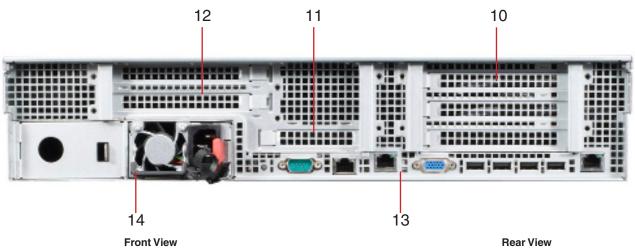
### ThinkServer RD640 Overview - Front and Rear



ThinkServer RD640 with 8x2.5"/16x2.5" Disk Drive Bays



ThinkServer RD640 with 8x3.5" Disk Drive Bays



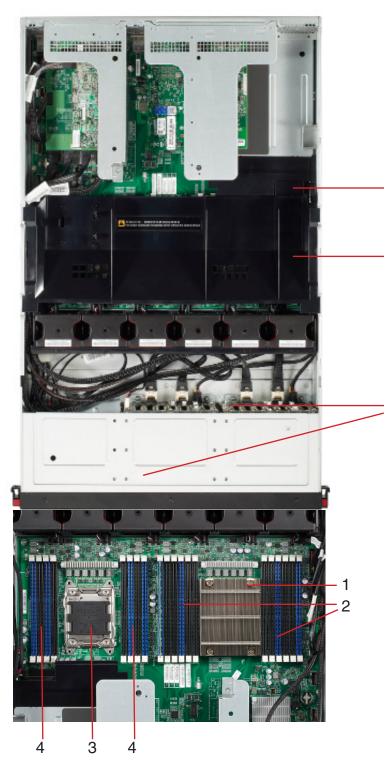
- Intelligent Diagnostics Premium Module (optional) Power Button with LED ID button with LED
- 1. 2. 3. 4. 5. 6. 7. 8. 9.
- 2 Network interface status LEDs 2 USB 2.0 1 VGA

- Hot-swap disk drive bays Hot-swap disk drive bays for 16x2.5" hard drive bays model Optical (optional)

- 11.
- PCI Express slots 1-3 PCI Express slots 4 PCI Express slots 5-6 (for dual processors model) 12.
- Rear ports: 4 USB 2.0 13.

  - 1 serial
  - 2 ethernet
  - 1 RJ-45 (dedicate/share mgmt)
  - 1 VGA
- 14. Hot-swap power supplies

### ThinkServer RD640 Overview - Internal



### **Internal View**

- Hot-swap cooling fans
   Processors and memory DIMM sockets (under cooling shroud, see below)
   PCI Express slots

# Processors and Memory DIMM Sockets (under cooling shroud)

2

3

- CPU 1
   12 Memory DIMM sockets for CPU 1
   CPU 2 (optional)
   8 Memory DIMM sockets for CPU 2 (for dual processors model)

# ThinkServer RD640 Platform Specifications

Components	Specifications												
Chipset	Intel C602J Chipset												
Mechanical	<ul> <li>2U rack with rail kit</li> <li>19"W x 28.9"D x 3.45</li> <li>482.4mm W x 734mm</li> <li>26.5 kg (58.42 lb) wh</li> </ul>	n D x 87.6mm H (with rack handl	es)										
Front ports		og VGA DB-15 connector											
Rear ports		al (9-pin), two ethernet (RJ-45), nare mgmt), one analog VGA DB	-15 connector										
-	uedicate/si	late flightly, offe affalog VGA DB	- 15 COTTRECTOR	<u></u>									
Expansion Slots	6	- PCle x16 - PCle x8 4 - PCle x	1 - PCle x16 2 - PCle x8 x8 3 - PCle x8										
	Siot 1: half-length, full-l Slot 2: half-length, full-l Slot 3: half-length, full-l Slot 4: Low Profile, PCI Slot 5-6 are available of Slot 5: half-length, full-l Slot 6: half-length, full-l	Up to six PCI-Express slots via two riser cards, riser card 1 for slot 1-3, riser card 2 for slot 4-6 Slot 1: half-length, full-height, PCI Express 3.0 x16 (x8 elec) Slot 2: half-length, full-height, PCI Express 3.0 x8 Slot 3: half-length, full-height, PCI Express 3.0 x8 Slot 4: Low Profile, PCI Express 3.0 x8 Slot 5: half-length on dual processors models: Slot 5: half-length, full-height, PCI Express 3.0 x16 (x8 elec) Slot 5: half-length, full-height, PCI Express 3.0 x8											
Graphics	Onboard Aspeed AST2 Maximum resolution: 1	2300 graphics/management proc 920x1200@60Hz	essor, one VGA DB-15 on front, one	e VGA DB-15 on rear;									
Hot-swap parts	Disk drives, power sup	plies, and cooling fans											
	Environmental certifications  • Energy Star Server 1.1 qualified • RoHS-compliant  EMC  FCC Class A, CSA CE												
	240VA Supports												
	Tomporature												
	operating 50 °F to 95 °F (10 °C to 35 °C)												
	Temperature - non operating (no package)	Temperature - non operating -10 °C to 60 °C											
	Temperature - non operating (with package)	-40 °C to 70 °C											
	Altitude - operating	Supported Altitude (unpressuri	zed): 0-10000ft (0-3048m)										
	Humidity - operating	8%~80%, non-condensing											
Safety, environment, and certifications	Humidity - non operating (no package)	8%~80%, non-condensing											
	Humidity - non operating (with package)	8%~90%, non-condensing											
		Category	Normal Configuration	Best Configuration									
		CPU	1	2									
		HDD	2x 900GB 2.5" SAS 6Gb/s	16x 900GB 2.5" SAS 6Gb/s									
		Memory	1x 8GB 1600MHz LVRDIMM	20x 8GB 1600MHz LVRDIMM									
	Acoustic noise (idle/working mode)	PCIe adapters	I350 X520-DA2 Emulex LPe16002	I350 X520-DA2 Emulex LPe16002									
		PSU	1x 800W	2x 800W									
		RAID	RAID 700 adapter	RAID 700 adapter									
		Sound Pressure (operating)	44.1 dB(A)	42.91 dB(A)									
		Sound Pressure (idle)	44.4 dB(A)	43.8 dB(A)									

## ThinkServer RD640 Optional Configurations - Processor and Memory

Rack kit	Included in models									
Processor	Two LGA2011 socke up to 8 cores (E5-26 two QPI links up to 8 up to 20MB (E5-260 integrated 4-channe	3.0GT/	's each.							
	The following proces	ssor o	otions are	available:						
	Processor Number		# of Threads	Clock Speed	Processors Max Turbo Frequency		QPI Speed	Max TDP	Memory Speed	Part Number
	Intel Xeon E5-2600			росси	rroquorioy		_ Сроси		, opeca	
	Xeon E5-2690	8	16	2.9 GHz	3.8 GHz	20MB	8 GT/s	135 W	DDR3-1600	0A89429
	Xeon E5-2680	8	16	2.7 GHz				130 W	DDR3-1600	
	Xeon E5-2670	8	16	2.6 GHz				115 W	DDR3-1600	
	Xeon E5-2667	6	12	2.9 GHz	3.5 GHz	15MB		130 W	DDR3-1600	
	Xeon E5-2665	8	16	2.4 GHz		20MB	8 GT/s	115 W	DDR3-1600	
	Xeon E5-2660	8	16	2.2 GHz	3 GHz	20MB	8 GT/s	95 W	DDR3-1600	
	Xeon E5-2650L	8	16	1.8 GHz	2.3 GHz	20MB	8 GT/s	70 W	DDR3-1600	0A89434
	Xeon E5-2650	8	16	2 GHz	2.8 GHz	20MB	8 GT/s	95 W	DDR3-1600	
	Xeon E5-2643	4	8	3.3 GHz		10MB	1	130 W	DDR3-1600	0A89440
	Xeon E5-2640	6	12	2.5 GHz	3 GHz	15MB	7.2 GT/s	95 W	DDR3-1333	
	Xeon E5-2630L	6	12	2 GHz	2.5 GHz			60 W	DDR3-1333	
	Xeon E5-2630	6	12	2.3 GHz	2.8 GHz	15MB	7.2 GT/s	95 W	DDR3-1333	0A89437
	Xeon E5-2620	6	12	2 GHz	2.5 GHz		7.2 GT/s	95 W	DDR3-1333	0A89438
	Xeon E5-2609	4	4	2.4 GHz		10MB	6.4 GT/s	80 W	DDR3-1066	0A89441
	Xeon E5-2603	4	4	1.8 GHz		10MB	6.4 GT/s	80 W	DDR3-1066	0A89442
	Intel Xeon E5-2600	) v2 S	eries		1		1			
	Xeon E5-2697 v2	12	24	2.7 GHz	3.5 GHz	30MB	8 GT/s	130 W	DDR3-1866	0C19546
	Xeon E5-2695 v2	12	24	2.4 GHz	3.2 GHz	30MB	8 GT/s	115 W	DDR3-1866	0C19547
	Xeon E5-2690 v2	10	20	3 GHz	3.6 GHz	25MB	8 GT/s	130 W	DDR3-1866	
	Xeon E5-2680 v2	10	20	2.8 GHz	3.6 GHz	25MB		115 W	DDR3-1866	1
	Xeon E5-2670 v2	10	20	2.5 GHz	3.3 GHz	25MB		115 W	DDR3-1866	
	Xeon E5-2667 v2	8	16	3.3 GHz	4 GHz	25MB		130 W	DDR3-1866	
	Xeon E5-2660 v2	10	20	2.2 GHz	3 GHz	25MB		95 W	DDR3-1866	
	Xeon E5-2650 v2	8	16	2.6 GHz	1	20MB	1	95 W	DDR3-1866	
	Xeon E5-2650L v2	10	20	1.7 GHz	2.1 GHz		7.2 GT/s	70 W	DDR3-1600	
	Xeon E5-2640 v2	8	16	2 GHz	2.5 GHz		7.2 GT/s	95 W	DDR3-1600	
	Xeon E5-2630 v2	6	12	2.6 GHz	3.1 GHz		7.2 GT/s	80 W	DDR3-1600	
	Xeon E5-2630L v2	6	12	2.4 GHz	2.8 GHz		7.2 GT/s	60 W	DDR3-1600	
	Xeon E5-2620 v2	6	12	2.1 GHz	2.6 GHz		7.2 GT/s	80 W	DDR3-1600	
	Xeon E5-2609 v2	4	4	2.5 GHz			6.4 GT/s	80 W	DDR3-1333	
	Notes: All processors specification and update this in		s provided			nged at a				
Memory type	RDIMM, DDR3, 4-cł	nannel	per proce	essor, 240	-pin					
	twenty DIMM socket		sockets fo	or CPU 1, 8	3 sockets fo	r CPU 2	)			
Memory capacity	Up to 320GB (16GB									
Memory protection	ECC, memory mirro	ring, n	nemory sp	paring						
			Men	nory option	ns			Part Numb		
	ThinkServer 4GB D	DR3L	-1600MH	z (1RX8) F	RDIMM			0C195	33	
	ThinkServer 8GB D	DR3L	-1600MH	z (2RX8) F	RDIMM			0C195	34	
Memory options	ThinkServer 16GB							0C195	35	
	Notes: • Actual memory oper: • By default, the voltag • When using Intel Xe	ge of Liv on E5-2	′ RDIMM is 2600 series	1.5V and c processors	an be change , LV RIMM is	ed to1.35 needed	V in BIOS so to run at 1.5	etting V to support	all 20 memory	

# ThinkServer RD640 Optional Configurations - Storage and RAID

Disk drive bays	Supports one of the follo • 8 x 3.5" SAS/SATA dis • 8 x 2.5" SAS/SATA dis • 16 x 2.5" SAS/SATA di	sk drive bays sk drive bays										
		Disk dri	ve options			Part Number						
	Hot-swap Disk drive for	3.5" bay				· ·						
	3.5" SATA Hard Drive											
	ThinkServer 3.5" 500GE	3 7.2K Enterpr	ise SATA 60	Sbps Hot S	Swap Hard Drive	0A89473						
	ThinkServer 3.5" 1TB 7	.2K Enterprise	SATA 6Gbp	s Hot Swa	p Hard Drive	0A89474						
	ThinkServer 3.5" 2TB 7	.2K Enterprise	SATA 6Gbp	s Hot Swa	p Hard Drive	0A89475						
	ThinkServer 3.5" 3TB 7	.2K Enterprise	SATA 6Gbp	s Hot Swa	p Hard Drive	0A89477						
	ThinkServer 3.5" 4TB 7				-	0C19520						
	3.5" SAS Hard Drive											
	ThinkServer 3.5" 1TB 7	.2K SAS 6Gbp	s Hot Swap	Hard Driv	e	0C19530						
	ThinkServer 3.5" 2TB 7	.2K SAS 6Gbp	s Hot Swap	Hard Driv	e	0C19531						
	ThinkServer 3.5" 3TB 7	.2K SAS 6Gbp	s Hot Swap	Hard Driv	e	0C19532						
	ThinkServer 3.5" 300GE	3 15K SAS 6G	67Y2616									
	ThinkServer 3.5" 600GE		•	•		67Y2618						
	2.5" SSD for 3.5" disk b			-		'						
Disk drive options	ThinkServer 2.5" 100GE	,	Solid State D	rive to 3.5'	' Kit	0C19571						
	ThinkServer 2.5" 200GE	0C19572										
	ThinkServer 2.5" 400GE	0C19573										
		Hot-swap Disk drive for 2.5" bay										
	•	2.5" SATA Hard Drive										
	ThinkServer 2.5" 500GE	3 7.2K Enterpr	rise SATA 60	Sbps Hot S	Swap Hard Drive	0C19495						
	ThinkServer 2.5" 1TB 7		0C19496									
	2.5" SAS Hard Drive											
	ThinkServer 2.5" 300GE	3 10K SAS 6G	67Y2619									
	ThinkServer 2.5" 600GE		67Y2621									
	ThinkServer 2.5" 900GE			-		0A89409						
	ThinkServer 2.5" 300GE			-		0C19494						
	2.5" SSD											
	ThinkServer 2.5" 100GE	B MLC SATA S	Solid State D	rive		0A89420						
	ThinkServer 2.5" 200GE		0A89418									
	ThinkServer 2.5" 400GE					0A89419						
						Data transfer						
		RAID support	Device Support	Cache	Host bus type	rates (per port)	Optional upgrades					
	ThinkServer RAID 500 (LSI® SAS 9240-8i)	0, 1, 10	SAS/SATA		PCI Express	6Gb/s	optional upgrade key, add RAID 5, 50 support					
RAID support	ThinkServer RAID 700 (LSI SAS 9260-8i)	0, 1, 10, 5, 50, 6, 60	SAS/SATA	512MB	PCI Express	6Gb/s	optional intelligent Battery Backup Unit (iBBU08)					
	ThinkServer RAID 710 (LSI SAS 9270CV-8i)	0, 1, 10, 5, 50, 6, 60	SAS/SATA	1GB	PCI Express	6Gb/s	optional CacheVault flash cache with super capacitor     optional CacheCade® Pro 2.0     optional FastPath					
	RAID	controller and	RAID upgra	de options		Part Number						
	ThinkServer RAID 500	Adapter II				0A89464						
	ThinkServer RAID 500	Upgrade Key f	0A89407									
	ThinkServer RAID 700	Adapter II				0A89463						
RAID options	ThinkServer RAID 700	67Y2647										
	1	ThinkServer RAID 710 Adapter 0C19489										
	ThinkServer RAID 710	0C19490										
		ThinkServer RAID 710 FastPath Software Key 0C19491										
	ThinkServer RAID 710					0C19492						

# ThinkServer RD640 Optional Configurations - Network, System Management, Power Supply

	· · · · · · · · · · · · · · · · · · ·		
	Network and HBA options	Part Number	
	ThinkServer 1Gbps Ethernet I350-T2 Server Adapter by Intel	0C19506	
	ThinkServer 1Gbps Ethernet I350-T4 Server Adapter by Intel	0C19507	
	Lenovo 10Gbps Ethernet X540-T2 Server Adapter by Intel	0C19497	
	Lenovo 10Gbps Ethernet X520-DA2 Server Adapter by Intel	0C19486	
Network options	Lenovo 10Gbps Ethernet Fiber Module by Intel	0C19488	
	Lenovo 10Gbps Ethernet X520-SR2 Server Adapter by Intel	0C19487	
	ThinkServer QLE8242-CU-CK Dual Port CNA by QLogic	0C19483	
	НВА		
	ThinkServer LPe1250 Single Port 8Gb Fibre Channel HBA by Emulex	0C19476	
	ThinkServer LPe12002 Dual Port 8Gb Fibre Channel HBA by Emulex	0C19478	
Convity ontions	Trusted Platform Module options	Part Number	
Security options	ThinkServer Trusted Platform Module	0A89428	
Systems management	System Management options	Part Number	
options for iKVM	ThinkServer Management Module Premium	67Y2624	
Dower cumply entians	Power supply options	Part Number	
Power supply options	ThinkServer 800W Gold Hot Swap Redundant Power Supply for Rack	4X20E54690	

## ThinkServer RD640 Services Upgrade Options

Partial list of Lenovo Services for ThinkServer RD540 with 3-year onsite base warranty models

For more information see: http://www.lenovo.com/services\_warranty/us/en/lenovo-warranty.html

To more information see. http://www.ienovo.com/services_wair	
Upgrade Service Description Warranty	Part Number
3YR Onsite 24x7x4 Hour Response	5WS0F15458
3YR Onsite 24x7x8 Hour Response	5WS0F15456 5WS0F15392
3YR Onsite 9x5x4 Hour Response	5WS0F15355
4YR Onsite 24x7x4 Hour Response	5WS0F15443
4YR Onsite 24x7x8 Hour Response	5WS0F15395
4YR Onsite 9x5x4 Hour Response	5WS0F15394
4YR Onsite NBD	5WS0F15415
5YR Onsite 24x7x4 Hour Response	5WS0F15377
5YR Onsite 24x7x8 Hour Response	5WS0F15440
5YR Onsite 9x5x4 Hour Response	5WS0F15430
5YR Onsite NBD	5WS0F15419
Keep Your Drive (KYD) Service	
3YR Keep Your Drive	5PS0F15436
3YR Onsite 24x7x4 Hour Response + KYD	5PS0F15376
3YR Onsite 24x7x8 Hour Response + KYD	5PS0F15349
3YR Onsite 9x5x4 Hour Response + KYD	5PS0F15448
4YR Onsite 24x7x4 Hour Response + KYD	5PS0F15389
4YR Onsite 24x7x8 Hour Response + KYD	5PS0F15359
4YR Onsite 9x5x4 Hour Response + KYD	5PS0F15456
4YR Onsite NBD + KYD	5PS0F15459
5YR Onsite 24x7x4 Hour Response + KYD	5PS0F15402
5YR Onsite 24x7x8 Hour Response + KYD 5YR Onsite 9x5x4 Hour Response + KYD	5PS0F15381
	5PS0F15366
5YR Onsite NBD + KYD Priority Technical Support	5PS0F15391
3YR KYD + Priority Support	5PS0F15417
3YR Onsite 24x7x4 Hour Response + KYD + Priority Support	5PS0F15352
3YR Onsite 24x7x4 Hour Response + Priority Support	5WS0F15399
3YR Onsite 24x7x8 Hour Response + KYD + Priority Support	5PS0F15444
3YR Onsite 24x7x8 Hour Response + Priority Support	5WS0F15418
3YR Onsite 9x5x4 Hour Response + KYD + Priority Support	5PS0F15398
3YR Onsite 9x5x4 Hour Response + Priority Support	5WS0F15468
3YR Priority Support	5WS0E76471
4YR Onsite 24x7x4 Hour Response + KYD + Priority Support	5PS0F15462
4YR Onsite 24x7x4 Hour Response + Priority Support	5WS0F15410
4YR Onsite 24x7x8 Hour Response + KYD + Priority Support	5PS0F15433
4YR Onsite 24x7x8 Hour Response + Priority Support	5WS0F15425
4YR Onsite 9x5x4 Hour Response + KYD + Priority Support	5PS0F15400
4YR Onsite 9x5x4 Hour Response + Priority Support	5WS0F15351
4YR Onsite NBD + KYD + Priority Support	5PS0F15373
4YR Onsite NBD + Priority Support	5WS0F15401
4YR Priority Support	5WS0E77170
5YR Onsite 24x7x4 Hour Response + KYD + Priority Support	5PS0F15350
5YR Onsite 24x7x4 Hour Response + Priority Support	5WS0F15412
5YR Onsite 24x7x8 Hour Response + KYD + Priority Support	5PS0F15471
5YR Onsite 24x7x8 Hour Response + Priority Support	5WS0F15447
5YR Onsite 9x5x4 Hour Response + KYD + Priority Support 5YR Onsite 9x5x4 Hour Response + Priority Support	5PS0F15437
5YR Onsite NBD + KYD + Priority Support	5WS0F15382 5PS0F15388
5YR Onsite NBD + Priority Support	5WS0F15463
5YR Priority Support	5WS0E77173
Post Warranty	34430E11113
1YR Onsite 24x7x4 Hour Response	5WS0F15435
1YR Onsite 24x7x4 Hour Response + Priority Support	5WS0F15370
1YR Onsite 24x7x8 Hour Response	5WS0F15427
1YR Onsite 24x7x8 Hour Response + Priority Support	5WS0F15361
1YR Onsite 9x5x4 Hour Response	5WS0F15416
1YR Onsite 9x5x4 Hour Response + Priority Support	5WS0F15348
1YR Onsite NBD	5WS0F15407
1YR Onsite NBD + Priority Support	5WS0F15465
TopSeller Priority (TopSeller models only)	
3YR Onsite 24x7x4 Hour Response	5WS0D73789
3YR Onsite 9x5x4 Hour Response	5WS0D73787
4YR Onsite 24x7x4 Hour Response	5WS0D73792
4YR Onsite 9x5x4 Hour Response	5WS0D73791
4YR Onsite NBD	5WS0F15470
3YR Onsite 24x7x4 Hour Response+Priority Support	5WS0F15414
3YR Onsite 9x5x4 Hour Response+Priority Support	5WS0F15423
3YR Priority Support	5WS0E76457
4YR Priority Support	5WS0E76482

24x7x4: 4 Hour Onsite Response Time in 24x7 Service Window (requires Location Activation)

- 24 hours a day, 7 days a week, including nights and weekends
  Once the need for on-site presence is confirmed, an on-site technician is dispatched to arrive within 4 hours.
  Best coverage for business critical work loads

### 9x5x4: 4 Hour Onsite Response Time in 9x5 Service Window (requires Location Activation)

• Once the need for on-site presence is confirmed, an on-site technician is dispatched to arrive within 4 hours.

### 24x7x8: 8 Hour Onsite Response Time in 24x7 Service Window (requires Location Activation)

•24 hours a day, 7 days a week, including nights and weekends Once the need for on-site presence is confirmed, an on-site technician is dispatched to arrive within 8 hours.

### **Priority Technical Support**

Lenovo's Priority Technical Support provides direct access to an advanced level technician supporting all of hardware, operating system and software needs related to server issues, available 24 hours a day, 7 days a week.

### Keep Your Drive (KYD) Service

Retain drive (hard drive or SSD) and confidential data if the drive must be replaced.

To confirm if 4hr services are available in a specified location, please use ThinkServer Service Availability Tool: http://www.lenovo.com/services\_warranty/us/en/locator.html

Once purchased, to activate the location of your 4hr/8hr ThinkServer Service, please use ThinkServer Service Activation page: http://www.lenovo.com/activation

## ThinkServer RD640 (70AY) - TopSeller

Type- model <sup>1</sup>	Intel Xeon Processor(s)	Memory	Disk Bays	RAID controller	Storage	Slim optical	Intelligent Diagnostics			Cable mgmt		Windows Server 2012 Preloaded	Base on-site warranty (-year)
	2xE5-2609 v2	4GBx20	8x3.5"		2x400GB SSD(cache,RAID1) +6x1TB 3.5" SAS(RAID50)			iKVM	X520SR2 +350T2 +350T2		800Wx2	Standard	1
70AY0002UX	2xE5-2670 v2 10C/2.5GHz/ 25MB/1866MHz	16GBx4	8x3.5"	RAID500 +Upgrade	6x3TB 3.5" SATA(RAID50) +2x3TB 3.5" SAS(RAID1)	DVD±RW	IDM	IPMI	350T4	No	800Wx2	No	1
70AY0003UX	1xE5-2630L v2 6C/2.4GHz/ 15MB/1600MHz	8GBx2	8x3.5"	RAID700	2x500GB 3.5" SATA(RAID1)	No	IDM	IPMI	350T2	No	800Wx2	No	1
70AY0005UX	1xE5-2609 v2 4C/2.5GHz/ 10MB/1333MHz	8GBx1	8x3.5"	RAID500	Open	DVD±RW	IDM Premium	IPMI	No	No	800Wx1	No	3
70AY0006UX	1xE5-2620 v2 6C/2.1GHz/ 15MB/1600MHz	8GBx1	8x3.5"	RAID700	Open	DVD±RW	IDM Premium	IPMI	No	No	800Wx1	No	3
70AY0007UX	1xE5-2650 v2 8C/2.6GHz/ 20MB/1866MHz	8GBx1	8x3.5"	RAID700	Open	DVD±RW	IDM Premium	IPMI	No	No	800Wx1	No	3
70AY0008UX	1xE5-2690 v2 10C/3GHz/ 25MB/1866MHz	8GBx1	8x3.5"	RAID700	Open	DVD±RW	IDM Premium	IPMI	No	No	800Wx1	No	3

<sup>1.</sup> Model in italics is Global model

- For detailed platform specifications, please see <u>ThinkServer RD640 Platform Specifications</u> sheets
   For optional configurations of ThinkServer RD640, please see <u>ThinkServer RD640 Optional Configurations sheets</u>

Chipset	Intel C602J Chip	set, two L	GA2011	sockets	for processors	2U Rack top
Memory type	RDIMM, DDR3, 4	4-channe	per prod	essor, 2	40-pin	Rise P. P.
Memory DIMMs	Twenty DIMM so	ckets (12	sockets	for CPU	1, 8 sockets for CPU 2)	Power supply Power supply Riser card 2 Riser card 2
Memory protection	ECC, memory m	irroring, n	nemory s	paring		supp supp
Disk drive bays	Supports 8 x 3.5	5", or 8 x 2	2.5", or 1	6 x 2.5" (	disk drive bays	
	RAID adapter*	RAID support	Cache	Transfer rates	Optional upgrades optional upgrade key,	Memon Sockets
	RAID 500 (LSI® 9240-8i)	0, 1, 10		6Gb/s	ockets  CPU1  Ockets  CPU2  Ockets  CPU2  Ockets	
RAID support	RAID 700 (LSI 9260-8i)	0, 1, 10, 5, 50, 6, 60	512MB	6Gb/s	fan fan fan fan fan	
TIAID Support	RAID 710 (LSI 9270CV-8i)	0, 1, 10, 5, 50, 6, 60	1GB	6Gb/s	optional CacheVault (CV)     flash cache with     super capacitor     optional CacheCade® Pro 2.0     optional FastPath key	Front - 3.5" bay  © □ □ □ ::::
	* All RAID adapte					Disk Bay 1-8
Optical (optional)	One DVD±RW or		, ,			Front - 2.5" bay (Bay 9-16 comes with 16x2.5" models)
Onboard network		ernet port	s by Intel by Intel 8	i350; 32574L, (	45): dedicate/share management	©∘□□□ Disk Bay Disk Bay
Discrete network (optional)	<ul> <li>Intel Ethernet</li> <li>Intel Ethernet</li> <li>Intel 10Gbps</li> <li>Intel 10Gbps</li> <li>Intel 10Gbps</li> <li>Intel 10Gbps</li> <li>Intel 10Gbps</li> </ul>	Server A Ethernet Ethernet Ethernet	dapter I3 X520-SF X520-DA Fiber Mo	350-T4 32 Serve 32 Serve dule for	r adapter X520-DA2 adapter	Optical   1-8   9-16
Intelligent Diagnostics Module (IDM. opt)	Supports IDM or IDM LED lights in IDM Premium LE	IDM Prer	nium on iling com	selected ponent o	models, category,	PSU PSU 9-00-00 9-00-00
Security features	Power-on passwo	ord/admir	istrator p	password	l,	Front and Rear Ports Front: 2 USB 2.0, 1 VGA
	IPMI 2.0-com	eed AST2 pliant bas	2300 graj eboard r	ohics/ma nanagen	nagement processor, nent controller (BMC);	Rear: 4 USB 2.0, 1 serial (9-pin), 2 ethernet (RJ-45), 1 RJ-45 (dedicate/share mgmt), 1 VGA
Systems management (Optional iKVM)	optional Think	Server M LEDs sh tGrid Mar	anagemows the stager	ent Modu status of	ule Premium for iKVM functions power, ID, network, system	Expansion Slots  Slot 1: half-length, full-height, PCle 3.0 x16 (x8 election slot 2: half-length, full-height, PCle 3.0 x8  Slot 3: half-length, full-height, PCle 3.0 x8
Cable mgmt (opt)	Optional cable m	anageme	nt arm o	n selecte	ed models	Slot 4: Low Profile, PCIe 3.0 x8
Power supply	80 PLUS® Gold o	qualified,	edundar	nt with tw	um, rear access, hot-swap, o power supplies	Slot 5-6 are available on dual processors models: Slot 5: half-length, full-height, PCle 3.0 x16 (x8 election Slot 6: half-length, full-height, PCle 3.0 x8
Environmental certifications	<ul> <li>Energy Star S</li> <li>RoHS-complication</li> <li>More environmen</li> <li>ThinkServer RD640 Pt</li> </ul>	ant	•		ements, please see ons of Standard Models sheet	Mechanical  • 2U rack with rail kit • 19"W x 28.9"D x 3.45"H (with rack handles) • 482.4mm W x 734mm D x 87.6mm H
						(with rack handles) • 26.5 kg (58.42 lb) when fully configured

## ThinkServer RD640 (70AY) - TopSeller (August 2014)

												Windows Server	Base on-site
Type- model <sup>1</sup>	Intel Xeon Processor(s)	Memory	Disk Bays	RAID controller	Storage	Slim optical	Intelligent Diagnostics		Discrete ethernet	Cable mgmt			warranty
70AY000HUS	Xeon E5-2640 v2 8C/2GHz/20MB/1600MHz	16GBx4 1866MHz	8x3.5"	RAID500	2x500GB 3.5" SATA (RAID 1)	DVD±RW	IDM Pre- mium	iKVM	350T2	No	800Wx2	R2 Datacenter	. 3
	Xeon E5-2630 v2 6C/2.6GHz/15MB/1600MHz	8GBx1 1600MHz	8x3.5"	RAID700	Open	DVD±RW	IDM Pre- mium	IPMI	No	No	800Wx1	No	3

### 1. Model in italics is Global model

- For detailed platform specifications, please see <u>ThinkServer RD640 Platform Specifications</u> sheets
   For optional configurations of ThinkServer RD640, please see <u>ThinkServer RD640 Optional Configurations sheets</u>

Chipset	Intel C602J Chip	set, two L	GA2011	sockets	for processors	2U Rack top
Memory type	RDIMM, DDR3, 4	4-channel	per pro	cessor, 2	40-pin	Rise P
Memory DIMMs	Twenty DIMM so	ckets (12	sockets	for CPU	1, 8 sockets for CPU 2)	Power supply Power supply Power supply Riser card 2 Riser card 2
Memory protection	ECC, memory m	irroring, n	nemory	sparing		supp supp
Disk drive bays	Supports 8 x 3.5	5", or 8 x 2	2.5", or 1	6 x 2.5"	disk drive bays	
	RAID adapter*	RAID support	Cache	Transfer rates	Optional upgrades	Mar Social
	RAID 500 (LSI® 9240-8i)	0, 1, 10		6Gb/s	optional upgrade key, add RAID 5, 50 support	Memory sockets Societs Societs Societs Societs Societs Societs Societs Societs
RAID support	RAID 700 (LSI 9260-8i)	0, 1, 10, 5, 50, 6, 60	512MB	6Gb/s	optional intelligent Battery Backup Unit (iBBU08)	fan fan fan fan fan fan
TIALD Support	RAID 710 (LSI 9270CV-8i)	0, 1, 10, 5, 50, 6, 60	1GB	6Gb/s	optional CacheVault (CV) flash cache with super capacitor     optional CacheCade® Pro 2.0     optional FastPath key	Front - 3.5" bay
	* All RAID adapte	ers suppo	rts SAS	and SAT	A drives	Disk Bay 1-8
Optical (optional)	One DVD±RW or					Front - 2.5" bay (Bay 9-16 comes with 16x2.5" models)
Onboard network	Three onboard G Two Gigabit Ethe one Gigabit Ethe	rnet ports	s by Intel	l i35Ò;	45): dedicate/share management	©≎□□□ Disk Bay Disk Bay
Discrete network (optional)	<ul> <li>Intel Ethernet</li> <li>Intel Ethernet</li> <li>Intel 10Gbps</li> <li>Intel 10Gbps</li> <li>Intel 10Gbps</li> <li>Intel 10Gbps</li> <li>Intel 10Gbps</li> </ul>	Server A Ethernet Ethernet Ethernet	dapter K X520-SF X520-DA Fiber Mo	350-T4 R2 Serve A2 Serve odule for	r adapter X520-DA2 adapter	Optical
Intelligent Diagnostics Module	Supports IDM or IDM LED lights in	IDM Prer ndicate fa	nium on iling com	selected	models, category,	4 - PCle x8 6 - PCle x8 PSU PSU 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
(IDM, opt)	IDM Premium LE Power-on passw					Front and Rear Ports Front: 2 USB 2.0. 1 VGA
Security features		eed AST2	2300 gra	phics/ma	nt) nagement processor, nent controller (BMC);	Rear: 4 USB 2.0, 1 serial (9-pin), 2 ethernet (RJ-45), 1 RJ-45 (dedicate/share mgmt), 1 VGA
Systems management (Optional iKVM)	optional Think	Server M LEDs shot Grid Mar	anagem ows the nager	ent Modu status of	ule Premium for iKVM functions power, ID, network, system	Expansion Slots  Slot 1: half-length, full-height, PCle 3.0 x16 (x8 elec) Slot 2: half-length, full-height, PCle 3.0 x8 Slot 3: half-length, full-height, PCle 3.0 x8
Cable mgmt (opt)	Optional cable m	anageme	nt arm c	n selecte	ed models	Slot 4: Low Profile, PCIe 3.0 x8
Power supply	80 PLUS® Gold o	qualified, ı	edunda	nt with tw	um, rear access, hot-swap, vo power supplies	Slot 5-6 are available on dual processors models: Slot 5: half-length, full-height, PCle 3.0 x16 (x8 elec) Slot 6: half-length, full-height, PCle 3.0 x8
Environmental certifications	<ul> <li>Energy Star S</li> <li>RoHS-compli</li> <li>More environmen</li> <li>ThinkServer RD640 P</li> </ul>	ant	•		ements, please see ons of Standard Models sheet	Mechanical     2U rack with rail kit     19"W x 28.9"D x 3.45"H (with rack handles)
Soo footnotes for impo	ortant warranty info	rmation				482.4mm W x 734mm D x 87.6mm H     (with rack handles)     26.5 kg (58.42 lb) when fully configured  © Lenovo

## ThinkServer RD640 (70B1) - TopSeller

Type- model <sup>1</sup>	Intel Xeon Processor(s)	Memory	Disk Bays	RAID controller	Storage	Slim optical	Intelligent Diagnostics		Discrete ethernet			Server 2012 Preloaded	Base on-site warranty (-year)
70B10000US	2xE5-2630 v2 6C/2.6GHz/ 15MB/1600MHz	16GBx4	8x2.5"	RAID700 +Battery	3x300GB 2.5" SAS(RAID5)	DVD±RW	IDM	iKVM	350T2	Cable	800Wx2	Standard	1
70B10004U>	1xE5-2609 v2 4C/2.5GHz/ 10MB/1333MHz	8GBx1	8x2.5"	RAID500	Open	DVD±RW	IDM Premium	IPMI	No	No	800Wx1	No	3
70B10005U>	1xE5-2620 v2 6C/2.1GHz/ 15MB/1600MHz	8GBx1	8x2.5"	RAID700	Open	DVD±RW	IDM Premium	IPMI	No	No	800Wx1	No	3
70B10006U>	1xE5-2620 v2 6C/2.1GHz/ 15MB/1600MHz	8GBx1	8x2.5"	RAID710	Open	DVD±RW	IDM Premium	IPMI	No	No	800Wx1	No	3
70B10007U>	1xE5-2640 v2 8C/2GHz/ 20MB/1600MHz	8GBx1	8x2.5"	RAID700	Open	DVD±RW	IDM Premium	IPMI	No	No	800Wx1	No	3
70B10008U>	1xE5-2670 v2 10C/2.5GHz/ 25MB/1866MHz	8GBx1	8x2.5"	RAID710	Open	DVD±RW	IDM Premium	IPMI	No	No	800Wx1	No	3
70B10009U>	25MB/1866MHz	8GBx1	8x2.5"	RAID710	Open	DVD±RW	IDM Premium	iKVM	No	No	800Wx1	No	3

<sup>1.</sup> Model in italics is Global model

- For detailed platform specifications, please see <u>ThinkServer RD640 Platform Specifications</u> sheets
   For optional configurations of ThinkServer RD640, please see <u>ThinkServer RD640 Optional Configurations sheets</u>

Chipset	Intel C602J Chip	set, two L	GA2011	sockets	for processors	2U Rack top
Memory type	RDIMM, DDR3, 4	4-channe	per prod	essor, 2	40-pin	Rise P. P.
Memory DIMMs	Twenty DIMM so	ckets (12	sockets	for CPU	1, 8 sockets for CPU 2)	Power supply Power supply Riser card 2 Riser card 2
Memory protection	ECC, memory m	irroring, n	nemory s	paring		supplemental suppl
Disk drive bays	Supports 8 x 3.5	5", or 8 x 2	2.5", or 1	6 x 2.5" (	disk drive bays	
	RAID adapter*	RAID support	Cache	Transfer rates	Optional upgrades optional upgrade key,	Memory Sockets
	RAID 500 (LSI® 9240-8i)	0, 1, 10		6Gb/s	ockets  CPU1  Ockets  CPU2  Ockets  CPU2  Ockets	
RAID support	RAID 700 (LSI 9260-8i)	0, 1, 10, 5, 50, 6, 60	512MB	6Gb/s	fan fan fan fan fan	
TIAID Support	RAID 710 (LSI 9270CV-8i)	0, 1, 10, 5, 50, 6, 60	1GB	6Gb/s	optional CacheVault (CV)     flash cache with     super capacitor     optional CacheCade® Pro 2.0     optional FastPath key	Front - 3.5" bay  © □ □ □ ::::
	* All RAID adapte					Disk Bay 1-8
Optical (optional)	One DVD±RW or		, ,			Front - 2.5" bay (Bay 9-16 comes with 16x2.5" models)
Onboard network		ernet port	s by Intel by Intel 8	i350; 32574L, (	45): dedicate/share management	©∘□□□ Disk Bay Disk Bay
Discrete network (optional)	<ul> <li>Intel Ethernet</li> <li>Intel Ethernet</li> <li>Intel 10Gbps</li> <li>Intel 10Gbps</li> <li>Intel 10Gbps</li> <li>Intel 10Gbps</li> <li>Intel 10Gbps</li> </ul>	Server A Ethernet Ethernet Ethernet	dapter I3 X520-SF X520-DA Fiber Mo	350-T4 32 Serve 32 Serve dule for	r adapter X520-DA2 adapter	Optical   1-8   9-16
Intelligent Diagnostics Module (IDM. opt)	Supports IDM or IDM LED lights in IDM Premium LE	IDM Prer	nium on iling com	selected ponent o	models, category,	PSU PSU 9-00-00 9-00-00
Security features	Power-on passwo	ord/admir	istrator p	password	l,	Front and Rear Ports Front: 2 USB 2.0, 1 VGA
	<ul> <li>Trusted Platform</li> <li>Onboard Aspending</li> <li>IPMI 2.0-com</li> </ul>	eed AST	2300 grai	ohics/ma	nt) nagement processor, nent controller (BMC);	Rear: 4 USB 2.0, 1 serial (9-pin), 2 ethernet (RJ-45), 1 RJ-45 (dedicate/share mgmt), 1 VGA
Systems management (Optional iKVM)	optional Think	Server M LEDs sh tGrid Mar	anagemows the stager	ent Modu status of	ule Premium for iKVM functions power, ID, network, system	Expansion Slots  Slot 1: half-length, full-height, PCle 3.0 x16 (x8 election slot 2: half-length, full-height, PCle 3.0 x8  Slot 3: half-length, full-height, PCle 3.0 x8
Cable mgmt (opt)	Optional cable m	anageme	nt arm o	n selecte	ed models	Slot 4: Low Profile, PCIe 3.0 x8
Power supply	80 PLUS® Gold o	qualified,	edundar	nt with tw	um, rear access, hot-swap, o power supplies	Slot 5-6 are available on dual processors models: Slot 5: half-length, full-height, PCle 3.0 x16 (x8 election Slot 6: half-length, full-height, PCle 3.0 x8
Environmental certifications	<ul> <li>Energy Star S</li> <li>RoHS-complia</li> <li>More environmer</li> <li>ThinkServer RD640 Pt</li> </ul>	ant ntal inforn	nation an		ements, please see	Mechanical     2U rack with rail kit     19"W x 28.9"D x 3.45"H (with rack handles)     482.4mm W x 734mm D x 87.6mm H
						(with rack handles) • 26.5 kg (58.42 lb) when fully configured

## ThinkServer RD640 (70B1) - TopSeller (August 2014)

Product Specifications Reference (PSREF)

												Windows	Base
												Server	on-site
Type-	Intel Xeon		Disk	RAID		Slim	Intelligent	Remote	Discrete	Cable		2012	warranty
model <sup>1</sup>	Processor(s)	Memory	Bays	controller	Storage	optical	Diagnostics	mgmt	ethernet	mgmt	PSU	Preloaded	(-year)
70B1001CUX	Xeon E5-2630 v2 6C/2.6GHz/15MB/1600MHz	8GBx1 1600MHz	8x2.5"	RAID700	Open	DVD±RW	IDM Premium	IPMI	No	No	800Wx1	No	3

<sup>1.</sup> Model in italics is Global model

- For detailed platform specifications, please see <u>ThinkServer RD640 Platform Specifications</u> sheets
   For optional configurations of ThinkServer RD640, please see <u>ThinkServer RD640 Optional Configurations sheets</u>

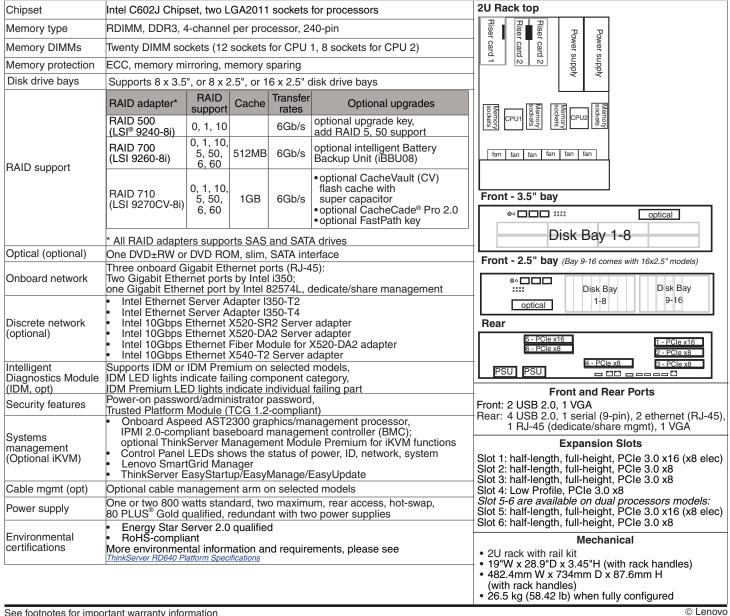
Memory DIMMs Twe Memory protection ECG Disk drive bays Sup RA RAID Support  RA (LS RA (LS  * All Optical (optional) Onboard network  Discrete network  Two one	DIMM, DDR3, 4 venty DIMM soc	I-channel	ner nro			+
Memory protection ECC Disk drive bays Sup  RA RA(LS RA(LS RA(LS RA(LS RA (LS RA	venty DIMM soc		per proc	cessor, 2	40-pin	
Disk drive bays  RA  RAID RAID support  RA (LS  * All  Optical (optional)  Onboard network  Discrete network  Sup  RA (LS  * All  Optical (optional)  One  Introduce		ckets (12	sockets	for CPU	1, 8 sockets for CPU 2)	Power supply Power supply Power supply Riser card 2 Riser card 2
RAID support  RA (LS RA (LS RA) (LS  * Al  Optical (optional) One Onboard network  Discrete network	CC, memory mi	rroring, n	nemory s	sparing		supp supp
RAID support  RA (LS RAID Support  RA (LS  * All Optical (optional) One Onboard network  Discrete network  RA (LS  * All Optical (optional) One Onboard network  Ithronone	upports 8 x 3.5	", or 8 x 2	2.5", or 1	6 x 2.5" d	disk drive bays	
RAID support  RA(LS  * Al  Optical (optional)  Onboard network  Discrete network  (LS  * Al  Thr  Two one  • I  • I  Discrete network	AID adapter*	RAID support	Cache	Transfer rates	Optional upgrades	
RAID support  RA (LS  * Al  Optical (optional) One  Onboard network  Discrete network  (LS	AID 500 _SI® 9240-8i)	0, 1, 10		6Gb/s	optional upgrade key, add RAID 5, 50 support	Warmory sockets sockets sockets sockets sockets sockets
* Al Optical (optional) One Onboard network Throone  Discrete network	AID 700 SI 9260-8i)	0, 1, 10, 5, 50, 6, 60	512MB	6Gb/s	fan fan fan fan fan fan	
Optical (optional) One Three Onboard network  One  Indicate the content of the co	AID 710 LSI 9270CV-8i)	0, 1, 10, 5, 50, 6, 60	1GB	6Gb/s	optional CacheVault (CV) flash cache with super capacitor     optional CacheCade® Pro 2.0     optional FastPath key	Front - 3.5" bay
Onboard network  Three Two one  Discrete network	All RAID adapte	ers suppo	rts SAS	and SAT	A drives	Disk Bay 1-8
Onboard network Two one  Onboard network Two one	ne DVD±RW or		, ,			Front - 2.5" bay (Bay 9-16 comes with 16x2.5" models)
• I • I Discrete network	nree onboard Gi vo Gigabit Ether ne Gigabit Ether	rnet ports	s by Intel	i35Ò;	15): dedicate/share management	● □□□ Disk Bay Disk Bay
	Intel Ethernet Intel Ethernet Intel 10Gbps E Intel 10Gbps E Intel 10Gbps E Intel 10Gbps E	Server A Ethernet Ethernet Ethernet	dapter I3 X520-SF X520-DA Fiber Mo	350-T4 R2 Serve R2 Serve Edule for 1	r adapter X520-DA2 adapter	Optical   1+8   9-16
Intelligent Sup Diagnostics Module IDM	upports IDM or IM LED lights in IM Premium LE	IDM Prer idicate fa	nium on iling com	selected	models, category,	4 - PCle x8
Security features Pow	ower-on passwo	ord/admir	istrator p	password	l,	Front and Rear Ports Front: 2 USB 2.0. 1 VGA
• (	IPMI 2.0-comp	eed AST2	2300 gra eboard r	phics/ma nanagen	nagement processor, nent controller (BMC):	Rear: 4 USB 2.0, 1 serial (9-pin), 2 ethernet (RJ-45), 1 RJ-45 (dedicate/share mgmt), 1 VGA
management (Optional iKVM)	optional Thinks Control Panel Lenovo Smart ThinkServer E	LEDs shat Grid Mar	ows the s nager	status of	ule Premium for iKVM functions power, ID, network, system  EasyUpdate	Expansion Slots  Slot 1: half-length, full-height, PCle 3.0 x16 (x8 elec) Slot 2: half-length, full-height, PCle 3.0 x8 Slot 3: half-length, full-height, PCle 3.0 x8
0 (17	ptional cable ma					Slot 4: Low Profile, PCIe 3.0 x8
80 F	) PLUS <sup>®</sup> Gold q	ualified, ı	redundar	nt with tw	um, rear access, hot-swap, ro power supplies	Slot 5-6 are available on dual processors models: Slot 5: half-length, full-height, PCle 3.0 x16 (x8 elec) Slot 6: half-length, full-height, PCle 3.0 x8
Environmental • I certifications Mor	Energy Star S RoHS-complia ore environmen inkServer RD640 Pla	ant ntal inforn	ination an		ements, please see	Mechanical  • 2U rack with rail kit  • 19"W x 28.9"D x 3.45"H (with rack handles)  • 482.4mm W x 734mm D x 87.6mm H
See footnotes for important	nt warranty infor	mation				(with rack handles) • 26.5 kg (58.42 lb) when fully configured  © Lenove

### ThinkServer RD640 (70B0) - TopSeller

Type- model <sup>1</sup>	Intel Xeon Processor(s)	Memory	Disk Bays	RAID controller	Storage	Slim optical	Intelligent Diagnostics			Cable mgmt	PSU	Server 2012 Preloaded	on-site warranty (-year)
70B00003US	2xE5-2690 v2 10C/3GHz/ 25MB/1866MHz	8GBx19+ 4GBx1	16x2.5"	RAID710 +CacheCade	2x100GB SSD(cache,RAID1) +14x1TB 2.5" SATA(RAID50)		IDM Premium	iKVM	X520SR2 +350T4+350T4	Cable	800Wx2	Standard	1
70B00004US	1xE5-2650 v2 8C/2.6GHz/ 20MB/1866MHz		16x2.5"	RAID500	2x900GB 2.5" SAS(RAID1)	No	IDM	IPMI	350T4	No	800Wx2	Standard	1
70B0000FUX	1xE5-2620 v2 6C/2.1GHz/ 15MB/1600MHz		16x2.5"	RAID700 +Battery	Open	DVD±RW	IDM Premium	iKVM	No	No	800Wx1	No	3
70B0000GUX	1xE5-2650 v2 8C/2.6GHz/ 20MB/1866MHz		16x2.5"	RAID710	Open	DVD±RW	IDM Premium	iKVM	No	No	800Wx1	No	3

<sup>1.</sup> Model in italics is Global model

- For detailed platform specifications, please see <u>ThinkServer RD640 Platform Specifications</u> sheets
   For optional configurations of ThinkServer RD640, please see <u>ThinkServer RD640 Optional Configurations sheets</u>



## ThinkServer RD640 (70B0) - TopSeller (November 2013)

Product Specifications Reference (PSREF)

Туре-	Intel Xeon		Disk	RAID	21	Slim	Intelligent			Cable	2011	-	Base on-site warranty
model <sup>1</sup>	Processor(s)	Memory	Bays	controller	Storage	optical	Diagnostics	mgmt	ethernet	mgmt	PSU	Preloaded	(-year)
70B0000LUX	1xE5-2650v2 8C/2.6GHz /20MB/1866MHz	8GBx1	16x2.5"	RAID710	Open	DVD±RW	IDM Premium	IPMI	No	No	800Wx1	No	3

Model in italics is Global model

- For detailed platform specifications, please see <u>ThinkServer RD640 Platform Specifications</u> sheets
   For optional configurations of <u>ThinkServer RD640</u>, please see <u>ThinkServer RD640 Optional Configurations sheets</u>

Chipset	Intel C602J Chip	set, two L	.GA2011	sockets	for processors	2U Rack top
Memory type	RDIMM, DDR3, 4	4-channe	per prod	cessor, 2	40-pin	Rise Pc Pc
Memory DIMMs	Twenty DIMM so	ckets (12	sockets	for CPU	1, 8 sockets for CPU 2)	Power supply Power supply Power supply Riser card 2 Riser card 2
Memory protection	ECC, memory m	irroring, r	nemory s	sparing		supp
Disk drive bays	Supports 8 x 3.5	5", or 8 x 2	2.5", or 1	6 x 2.5" (	disk drive bays	
	RAID adapter*	RAID support	Cache	Transfer rates	Optional upgrades optional upgrade key,	Memor Sockets
	RAID 500 (LSI® 9240-8i)	0, 1, 10		6Gb/s	ockets  CPU1  Ockets  CPU2  CPU2  CPU2  CPU2  CPU2  CPU2  CPU2  CPU2  CPU3  CP	
RAID support	RAID 700 (LSI 9260-8i)	0, 1, 10, 5, 50, 6, 60	512MB	6Gb/s	optional intelligent Battery Backup Unit (iBBU08)	fan fan fan fan fan
TIAID Support	RAID 710 (LSI 9270CV-8i)	0, 1, 10, 5, 50, 6, 60	1GB	6Gb/s	optional CacheVault (CV) flash cache with super capacitor     optional CacheCade® Pro 2.0     optional FastPath key	Front - 3.5" bay  © □ □ □ :::: optical
	* All RAID adapte					Disk Bay 1-8
Optical (optional)	One DVD±RW or		, ,			Front - 2.5" bay (Bay 9-16 comes with 16x2.5" models)
Onboard network		rnet port	s by Intel by Intel 8	i350; 32574L, d	45): dedicate/share management	© Disk Bay Disk Bay
Discrete network (optional)	<ul> <li>Intel Ethernet</li> <li>Intel Ethernet</li> <li>Intel 10Gbps</li> <li>Intel 10Gbps</li> <li>Intel 10Gbps</li> <li>Intel 10Gbps</li> <li>Intel 10Gbps</li> </ul>	Server A Ethernet Ethernet Ethernet	dapter 13 X520-SF X520-DA Fiber Mo	350-T4 R2 Serve R2 Serve	r adapter X520-DA2 adapter	Optical   1+8   9-16
Intelligent Diagnostics Module (IDM. opt)	Supports IDM or IDM LED lights in IDM Premium LE	IDM Prei	nium on iling com	selected	models, category,	PSU PSU
Security features	Power-on passwo Trusted Platform	ord/admir	nistrator p	password	d,	Front: 2 USB 2.0, 1 VGA
Systems	<ul> <li>Onboard Asp IPMI 2.0-com</li> </ul>	eed AST2 pliant bas	2300 gra eboard r	phics/ma nanagen	nagement processor, nent controller (BMC);	Rear: 4 USB 2.0, 1 serial (9-pin), 2 ethernet (RJ-45) 1 RJ-45 (dedicate/share mgmt), 1 VGA
management (Optional iKVM)		LEDs sh tGrid Maı	ows the a	status of	ule Premium for iKVM functions power, ID, network, system  EasyUpdate	Expansion Slots  Slot 1: half-length, full-height, PCle 3.0 x16 (x8 elec) Slot 2: half-length, full-height, PCle 3.0 x8  Slot 3: half-length, full-height, PCle 3.0 x8
Cable mgmt (opt)	Optional cable m	anageme	nt arm o	n selecte	ed models	Slot 4: Low Profile, PCle 3.0 x8
Power supply	80 PLUS® Gold o	qualified,	redundaı	nt with tw	um, rear access, hot-swap, o power supplies	Slot 5-6 are available on dual processors models: Slot 5: half-length, full-height, PCle 3.0 x16 (x8 elec) Slot 6: half-length, full-height, PCle 3.0 x8
Environmental certifications	<ul> <li>Energy Star S</li> <li>RoHS-compli</li> <li>More environmer</li> <li>ThinkServer RD640 Pt</li> </ul>	ant ntal inforn	i nation ar		ements, please see	Mechanical  • 2U rack with rail kit  • 19"W x 28.9"D x 3.45"H (with rack handles)
						<ul> <li>482.4mm W x 734mm D x 87.6mm H (with rack handles)</li> <li>26.5 kg (58.42 lb) when fully configured</li> </ul>

## ThinkServer RD640 (70B0) - TopSeller (August 2014)

Product Specifications Reference (PSREF)

	Type- model <sup>1</sup>	Intel Xeon Processor(s)	Memory	Disk Bavs	RAID controller	Storage	Slim	Intelligent Diagnostics		Discrete ethernet	Cable mgmt		Windows Server 2012 Preloaded	Base on-site warranty (-year)
70		Xeon E5-2630 v2 6C/2.6GHz/15MB/1600MHz	8GBx1 1600MHz	16x2.5	RAID700		DVD±RW	IDM	IPMI	No		800Wx1	No	3

<sup>1.</sup> Model in italics is Global model

- For detailed platform specifications, please see <u>ThinkServer RD640 Platform Specifications</u> sheets
   For optional configurations of ThinkServer RD640, please see <u>ThinkServer RD640 Optional Configurations sheets</u>

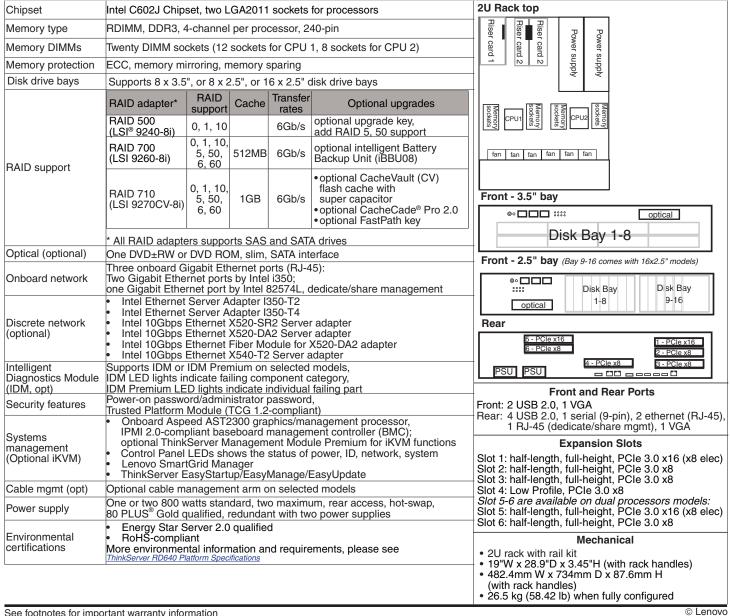
Systems management (Optional iKVM)  PMI 2.0-compliant baseboard management controller (BMC); optional ThinkServer Management Module Premium for iKVM functions Control Panel LEDs shows the status of power, ID, network, system Lenovo SmartGrid Manager ThinkServer EasyStartup/EasyManage/EasyUpdate  Cable mgmt (opt)  Cable mgmt (opt)  Optional cable management arm on selected models  Optional cable management controller (BMC); optional ThinkServer Management Module Premium for iKVM functions  Slot 1: half-length, full-height, PCle 3.0 x8 Slot 3: half-length, full-height, PCle 3.0 x8 Slot 4: Low Profile, PCle 3.0 x8 Slot 5-6 are available on dual processors models:	Chipset	Intel C602J Chip	set, two L	.GA2011	sockets	for processors	2U Rack top
Memory protection ECC, memory mirroring, memory sparing  Disk drive bays  Supports 8 x 3.5°, or 8 x 2.5°, or 16 x 2.5° disk drive bays  RAID adapter' RAID 500 (LSI*9*240-8i) 0, 1, 10 (LSI*9*240-8i) 0, 1, 10 (LSI*9*240-8i) 0, 1, 10 (LSI*9*240-8i) 0, 1, 10 (LSI*9*260-8i) 0, 1, 10 (LSI*9*270CV-8ii) 0, 1, 10 (LSI*9*270CV	Memory type	RDIMM, DDR3, 4	4-channe	l per pro	cessor, 2	40-pin	Rise Pc
Memory protection   EUC, memory mirroring, memory sparing	Memory DIMMs	Twenty DIMM so	ckets (12	sockets	for CPU	1, 8 sockets for CPU 2)	owers over r carc
Supports 8 x 3.5", or 16 x 2.5", or 16 x 2.5" disk drive bays  RAID adapter Support 8 x 3.5", or 16 x 2.5" disk drive bays  RAID 500 (LSP 9240-8) 0. 1, 10 RAID 700 (LSP 9240-8) 0. 1, 10 RAID 710 0, 1, 10 RAID 710 RAID	Memory protection	ECC, memory m	irroring, n	nemory	sparing		suppl
RAID 500 (LSI® 9240-81) 0, 1, 10 6Gb/s of Gab/s optional upgrade key, add RAID 5, 50 support  RAID 700 (LSI® 9240-81) 0, 1, 10, (LSI® 9240-81) 0,	Disk drive bays	Supports 8 x 3.5	5", or 8 x 2	2.5", or 1	6 x 2.5"	disk drive bays	
RAID support  RAID 700 (LSI 9260-8) 0, 1, 10, 5, 50, 0 (LSI 9260-8) 6, 60 0 1, 10, 10, 10, 10, 10, 10, 10, 10, 1		RAID adapter*		Cache		Optional upgrades	
RAID support    CLSI 9260-8i   5, 50, 660   5   50   50   50   5   50   50					6Gb/s	optional upgrade key, add RAID 5, 50 support	
Pall Pall Pall Pall Pall Pall Pall Pall	RAID support	RAID 700 (LSI 9260-8i)	5, 50,	512MB	6Gb/s	fan fan fan fan fan	
Optical (optional)  One DVD±RW or DVD ROM, slim, SATA interface  Three onboard Gigabit Ethernet ports (RJ-45): Two Gigabit Ethernet ports by Intel 82574L, dedicate/share management  Intel Ethernet Server Adapter 1350-T2  Intel Ethernet Server Adapter 1350-T4  Discrete network (optional)  Intel I Gbps Ethernet X520-SR2 Server adapter  Intel 1 Gbps Ethernet X520-DA2 Server adapter  Intel 1 Gbps Ethernet X520-DA2 Server adapter  Intel 1 Gbps Ethernet X540-T2 Server Adapter  Intel	Thus support		5, 50,	1GB	6Gb/s	flash cache with super capacitor optional CacheCade® Pro 2.0	⊚∘ □ □ □ ∷∷: optical
Three onboard Gigabit Ethernet ports (RJ-45): Two Gigabit Ethernet ports by Intel 1350; one Gigabit Ethernet port by Intel 1350; intel Ethernet Server Adapter 1350-T4  intel Ethernet Server Adapter 1350-T4  intel 10Gbps Ethernet X520-DA2 Server adapter intel 10Gbps Ethernet Fiber Module for X520-DA2 adapter intel 10Gbps Ethernet Fiber Module for X520-DA2 adapter intel 10Gbps Ethernet Fiber Module for X520-DA2 adapter intel 10Gbps Ethernet X540-T2 Server adapter lintelligent Diagnostics Module (IDM. opt)  Security features  Security features  Systems management (Optional ikVM)  Systems management (Optional ikVM)  Cable mgmt (opt)  Cable mgmt (opt)  One or two 800 watts standard, two maximum, rear access, hot-swap, 80 PLUS* Gold qualified, redundant with two power supplies  Environmental certifications  ThinkServer RD640 Platform Specifications  ThinkServer RD640 Platform S		* All RAID adapte	ers suppo	rts SAS	and SAT	A drives	Disk Bay 1-8
Onboard network  Inree onboard Gigabit Ethernet ports by Intel 1350; one Gigabit Ethernet ports by Intel 1350; one Gigabit Ethernet port by Intel 82574L, dedicate/share management  Intel Ethernet Server Adapter 1350-T2 Intel Ethernet Server Adapter 1350-T2 Intel 10Gbps Ethernet X520-DA2 Server adapter Intel 10Gbps Ethernet X520-DA2 Server adapter Intel 10Gbps Ethernet X540-T2 Se	Optical (optional)						Front - 2.5" bay (Bay 9-16 comes with 16x2.5" models)
Discrete network (optional)  Intel Ethernet Server Adapter 350-T4  Intel 10Gbps Ethernet X520-DA2 Server adapter  Intel 10Gbps Ethernet X520-DA2 Server adapter  Intel 10Gbps Ethernet K520-DA2 Server adapter  Intel 10Gbps Ethernet K520-DA2 Server adapter  Intel 10Gbps Ethernet K520-DA2 Server adapter  Intel 10Gbps Ethernet K540-T2 Server adapter  Intel 10Gbps Interest Server Seporer  Intel 10Gbps Interest Server Seporer  Intel 10Gbps Interest Seporer  Intel 10Gbps Interest Server Seporer  Intel 10Gbps Interest Seporer  Intel 10Gbps Interest Seporer  Intel 10Gbps Interest Seporer  Intel 10Gbps Interest Seporer  Int	Onboard network	Two Gigabit Ethe	ernet ports	s by Inte	l i35Ò;	,	© O O O O O O O O O O O O O O O O O O O
Intelligent Diagnostics Module (IDM LED lights indicate failing component category, (IDM, opt)   IDM Premium LED lights indicate individual failing part		<ul><li>Intel Ethernet</li><li>Intel 10Gbps</li><li>Intel 10Gbps</li><li>Intel 10Gbps</li></ul>	Server A Ethernet Ethernet Ethernet	dapter I X520-SI X520-D/ Fiber Mo	350-T4 R2 Serve A2 Serve odule for	r adapter X520-DA2 adapter	Rear  5-PCle x16 1-PCle x16
Security features  Power-on password/administrator password, Trusted Platform Module (TCG 1.2-compliant)  Systems management (Optional iKVM)  Cable mgmt (opt)  Power supply  Power supply  Environmental certifications  Power-on password/administrator password, Trusted Platform Module (TCG 1.2-compliant)  Onboard Aspeed AST2300 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC); optional ThinkServer Management Module Premium for iKVM functions Control Panel LEDs shows the status of power, ID, network, system Lenovo SmartGrid Manager ThinkServer EasyStartup/EasyManage/EasyUpdate  Optional cable management arm on selected models  One or two 800 watts standard, two maximum, rear access, hot-swap, 80 PLUS® Gold qualified, redundant with two power supplies  Penergy Star Server 2.0 qualified RoHS-compliant More environmental information and requirements, please see ThinkServer RD640 Platform Specifications  Power supply  Power-on password/administrator password, Trusted Platform Module (TCG 1.2-compliant) Ponocation (BMC); Optional Cable remium for iKVM functions Expansion Slots Slot 1: half-length, full-height, PCle 3.0 x8 Slot 2: half-length, full-height, PCle 3.0 x8 Slot 4: Low Profile, PCle 3.0 x8 Slot 5: half-length, full-height, PCle 3.0 x8 Slot 4: Low Profile, PCle 3.0 x8 Slot 4: Low Profile, PCle 3.0 x8 Slot 5: half-length, full-height, PCle 3	Diagnostics Module	Supports IDM or IDM LED lights in	IDM Prer	mium on iling con	selected	models, category,	PSU PSU DE
Onboard Aspeed AST2300 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC); optional ThinkServer Management Module Premium for iKVM functions Control Panel LEDs shows the status of power, ID, network, system Lenovo SmartGrid Manager ThinkServer EasyStartup/EasyManage/EasyUpdate  Cable mgmt (opt)  Optional cable management arm on selected models One or two 800 watts standard, two maximum, rear access, hot-swap, 80 PLUS® Gold qualified, redundant with two power supplies  Environmental certifications  One or two 800 watts standard, two maximum, rear access, hot-swap, 80 PLUS® Gold qualified ThinkServer RD640 Platform Specifications  One or two 800 watts standard, two maximum, rear access, hot-swap, 80 PLUS® Gold qualified ThinkServer RD640 Platform Specifications  One or two 800 watts standard, two power supplies  Environmental certifications  Figure 1 USB 2.0, 1 Selfal (9-plit), 2 ethrieffet (NJ-2 1 NJ-45 (dedicate/share mgmt), 1 VGA  Expansion Slots  Slot 1: half-length, full-height, PCle 3.0 x8 Slot 3: half-length, full-height, PCle 3.0 x8 Slot 4: Low Profile, PCle 3.0 x8 Slot 5-6 are available on dual processors models: Slot 5: half-length, full-height, PCle 3.0 x16 (x8 electors) (x8 electors	· · · ·	Power-on passw	ord/admir	nistrator	password	d,	
Lenovo SmartGrid Manager ThinkServer EasyStartup/EasyManage/EasyUpdate  Cable mgmt (opt)  Optional cable management arm on selected models  One or two 800 watts standard, two maximum, rear access, hot-swap, 80 PLUS® Gold qualified, redundant with two power supplies  Environmental certifications  Power supply  Lenovo SmartGrid Manager ThinkServer EasyStartup/EasyManage/EasyUpdate  Optional cable management arm on selected models  One or two 800 watts standard, two maximum, rear access, hot-swap, 80 PLUS® Gold qualified, redundant with two power supplies  Environmental certifications  Environmental certifications  ThinkServer RD640 Platform Specifications  Lenovo SmartGrid Manager Slot 1: half-length, full-height, PCle 3.0 x8 Slot 3: half-length, full-height, PCle 3.0 x8 Slot 4: Low Profile, PCle 3.0 x8 Slot 5: half-length, full-height, PCle 3.0 x8 Slot 4: Low Profile, PCle 3.0 x8 Slot 5: half-length, full-height, PCle 3.0 x8 Slot 4: Low Profile, PCle 3.0 x8 Slot 5: half-length, full-height, PCle 3.0 x8 Slot 4: Low Profile, PCle 3.0 x8 Slot 5: half-length, full-height, PCle 3.0 x8 Slot 4: Low Profile, PCle 3.0 x8 Slot 5: half-length, full-height, PCle 3.0 x8 Slot 4: Low Profile, PCle 3.0 x8 Slot 5: half-length, full-height, PCle 3.0 x8 Slot 4: Low Profile, PCle 3.0 x8 Slot 5: half-length, full-height, PCle 3.0 x8 Slot 5: half-length, full-height, PCle 3.0 x8 Slot 5: half-length, full-he	management	<ul> <li>Onboard Asp IPMI 2.0-com optional Think</li> </ul>	eed AST2 pliant bas Server M	2300 gra seboard lanagem	phics/ma managen nent Modi	nagement processor, nent controller (BMC); ule Premium for iKVM functions	Expansion Slots
Cable mgmt (opt)  Optional cable management arm on selected models  One or two 800 watts standard, two maximum, rear access, hot-swap, 80 PLUS® Gold qualified, redundant with two power supplies  Environmental certifications  Power supply  Environmental certifications  One or two 800 watts standard, two maximum, rear access, hot-swap, 80 PLUS® Gold qualified, redundant with two power supplies  Environmental certifications  Environmental information and requirements, please see ThinkServer RD640 Platform Specifications  Nore environmental information and requirements, please see ThinkServer RD640 Platform Specifications  Slot 4: Low Profile, PCle 3.0 x8  Slot 5-6 are available on dual processors models: Slot 5: half-length, full-height, PCle 3.0 x16 (x8 elections)  Mechanical  2 U rack with rail kit  19"W x 28.9"D x 3.45"H (with rack handles)  482.4mm W x 734mm D x 87.6mm H (with rack handles)	(Optional iKVM)	<ul> <li>Lenovo Smar</li> </ul>	tGrid Mar	nager		• • • • • • • • • • • • • • • • • • • •	Slot 2: half-length, full-height, PCIe 3.0 x8
Power supply  80 PLUS® Gold qualified, redundant with two power supplies  Energy Star Server 2.0 qualified  RoHS-compliant  More environmental information and requirements, please see  ThinkServer RD640 Platform Specifications  Slot 5: half-length, full-height, PCle 3.0 x16 (x8 elections)  Mechanical  • 2U rack with rail kit  • 19"W x 28.9"D x 3.45"H (with rack handles)  • 482.4mm W x 734mm D x 87.6mm H (with rack handles)	Cable mgmt (opt)	'					Slot 4: Low Profile, PCIe 3.0 x8
Environmental certifications  - RoHS-compliant  More environmental information and requirements, please see  ThinkServer RD640 Platform Specifications  - 2U rack with rail kit  - 19"W x 28.9"D x 3.45"H (with rack handles)  - 482.4mm W x 734mm D x 87.6mm H (with rack handles)	Power supply	One or two 800 v 80 PLUS® Gold of	watts stan qualified,	dard, tw redunda	o maxim nt with tw	um, rear access, hot-swap, o power supplies	Slot 5: half-length, full-height, PCIe 3.0 x16 (x8 elec)
(with rack handles)		<ul> <li>RoHŠ-compli More environment</li> </ul>	ant ntal inforn	nation ar		ements, please see	Mechanical  • 2U rack with rail kit  • 19"W x 28.9"D x 3.45"H (with rack handles)
See footnotes for important warranty information © Len							(with rack handles)

### ThinkServer RD640 (70AV)

Type- model <sup>1</sup>	Intel Xeon Processor(s)	Memory	Disk Bays	RAID controller	Storage	Slim optical	Intelligent Diagnostics		Discrete ethernet	Cable mgmt	PSU	Windows Server 2012 Preloaded	Base on-site warranty (-year)
70AV0000UX	1xE5-2620 v2 6C/2.1GHz/ 15MB/1600MHz	8GBx1	8x3.5"	RAID500	Open	DVD±RW	IDM Premium	IPMI	No	No	800Wx1	No	3
70AV0001UX	1xE5-2620 v2 6C/2.1GHz/ 15MB/1600MHz	8GBx1	8x3.5"	RAID700	Open	DVD±RW	IDM Premium	iKVM	No	No	800Wx1	No	3

<sup>1</sup> Model in italics is Global model

- For detailed platform specifications, please see <u>ThinkServer RD640 Platform Specifications</u> sheets
   For optional configurations of <u>ThinkServer RD640</u>, please see <u>ThinkServer RD640 Optional Configurations sheets</u>

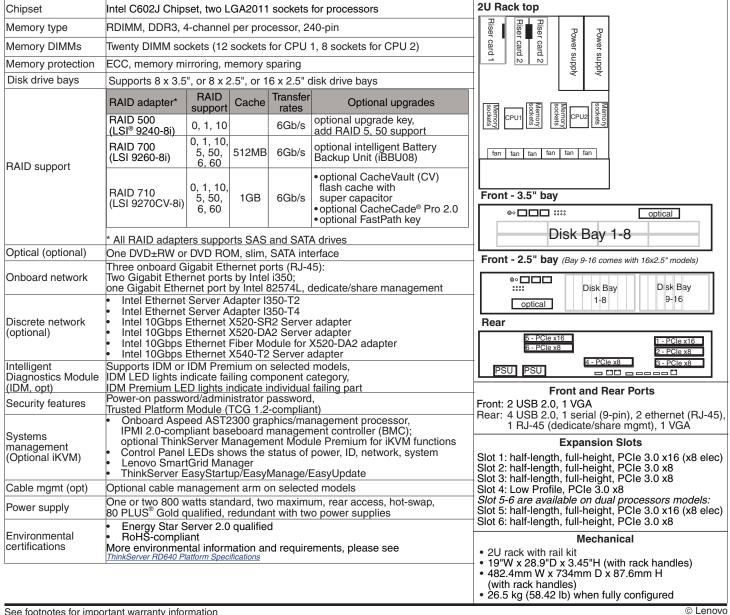


### ThinkServer RD640 (70AX)

												Windows	Base
												Server	on-site
Type-	Intel Xeon		Disk	RAID		Slim	Intelligent	Remote	Discrete	Cable		2012	warranty
model <sup>1</sup>	Processor(s)	Memory	Bays	controller	Storage	optical	Diagnostics	mgmt	ethernet	mgmt	PSU	Preloaded	(-year)
	1xE5-2620 6C/2GHz/ 15MB/1333MHz	8GBx1	8x2.5"	RAID700	Open	DVD±RW	IDM Premium	iKVM	No	No	800Wx1	No	3

<sup>1.</sup> Model in italics is Global model

- For detailed platform specifications, please see <u>ThinkServer RD640 Platform Specifications</u> sheets
   For optional configurations of <u>ThinkServer RD640</u>, please see <u>ThinkServer RD640 Optional Configurations sheets</u>

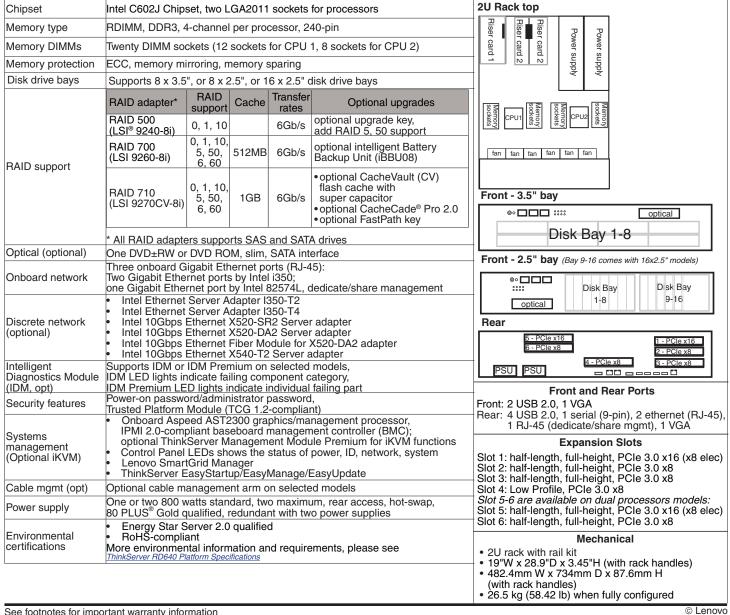


### ThinkServer RD640 (70AW)

												Windows	Base
												Server	on-site
Type-	Intel Xeon		Disk	RAID		Slim	Intelligent	Remote	Discrete	Cable		2012	warranty
model <sup>1</sup>	Processor(s)	Memory	Bays	controller	Storage	optical	Diagnostics	mgmt	ethernet	mgmt	PSU	Preloaded	(-year)
70AW0005UX	1xE5-2620 v2 6C/2.1GHz/ 15MB/1600MHz		16x2.5"	RAID700	Open	DVD±RW	IDM Premium	iKVM	No	No	800Wx1	No	3

<sup>1.</sup> Model in italics is Global model

- For detailed platform specifications, please see <u>ThinkServer RD640 Platform Specifications</u> sheets
   For optional configurations of <u>ThinkServer RD640</u>, please see <u>ThinkServer RD640 Optional Configurations sheets</u>



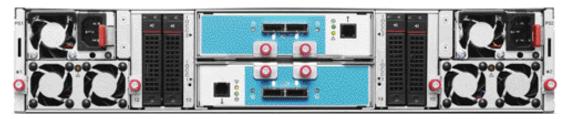
## **ThinkServer SA120 Direct Attached Storage Photography**



Front View



Rear View (With optional 2nd I/O module and 2nd power supply)



Rear View

(With optional 4 x 2.5" SATA SSD hot-swap disk drive bays, 2nd I/O module, and 2nd power supply)

## ThinkServer SA120 Direct Attached Storage - Standard Models

00000UX	(1 or 2)	for SAS disk drives	for SATA SSD			External minSAS Cable	Supply	ı I	Base	Date
	1			(up to 12)	(up to 4)	(SFF8088 to SFF8088)	(1 or 2)	Rail kit	Warranty	(mm/yy)
		12 x 3.5"	No	Open	No	1 x 1m	1 x 550W	Rail kit	3	02/14
F00001UX	1	12 x 3.5"	No	12 x 1TB 3.5" SAS	No	1 x 1m	1 x 550W	Rail kit	3	02/14
F00002UX	2	12 x 3.5"	No	12 x 2TB 3.5" SAS	No	2 x 1m	2 x 550W	Rail kit	3	02/14
F00003UX	2	12 x 3.5"	No	12 x 4TB 3.5" SAS	No	2 x 1m	2 x 550W	Rail kit	3	02/14
10000UX	1	12 x 3.5"	No	Open	No	1 x 1m	1 x 550W	Rail kit	3	02/14
10001UX	2	12 x 3.5"	No	Open	No	2 x 1m	2 x 550W	Rail kit	3	02/14
10006UX	2	12 x 3.5"	No	12 x 2TB 3.5" SAS	No	2 x 1m	2 x 550W	Rail kit	3	05/14
10007UX	2	12 x 3.5"	No	12 x 4TB 3.5" SAS	No	2 x 1m	2 x 550W	Rail kit	3	05/14
10	0002UX 0003UX 0000UX 0001UX 0006UX	0002UX 2 0003UX 2 0000UX 1 0001UX 2 0006UX 2	0002UX     2     12 x 3.5"       0003UX     2     12 x 3.5"       0000UX     1     12 x 3.5"       0001UX     2     12 x 3.5"       0006UX     2     12 x 3.5"       0007UX     2     12 x 3.5"	D0002UX       2       12 x 3.5"       No         D0003UX       2       12 x 3.5"       No         D000UX       1       12 x 3.5"       No         D001UX       2       12 x 3.5"       No         D006UX       2       12 x 3.5"       No         D007UX       2       12 x 3.5"       No	D002UX         2         12 x 3.5"         No         12 x 2TB 3.5" SAS           D003UX         2         12 x 3.5"         No         12 x 4TB 3.5" SAS           D000UX         1         12 x 3.5"         No         Open           D001UX         2         12 x 3.5"         No         Open           D006UX         2         12 x 3.5"         No         12 x 2TB 3.5" SAS           D007UX         2         12 x 3.5"         No         12 x 4TB 3.5" SAS	D0002UX         2         12 x 3.5"         No         12 x 2TB 3.5" SAS         No           D003UX         2         12 x 3.5"         No         12 x 4TB 3.5" SAS         No           D000UX         1         12 x 3.5"         No         Open         No           D001UX         2         12 x 3.5"         No         Open         No           D006UX         2         12 x 3.5"         No         12 x 2TB 3.5" SAS         No	DO002UX         2         12 x 3.5"         No         12 x 2TB 3.5" SAS         No         2 x 1m           D003UX         2         12 x 3.5"         No         12 x 4TB 3.5" SAS         No         2 x 1m           D000UX         1         12 x 3.5"         No         Open         No         1 x 1m           D001UX         2         12 x 3.5"         No         Open         No         2 x 1m           D006UX         2         12 x 3.5"         No         12 x 2TB 3.5" SAS         No         2 x 1m	D002UX         2         12 x 3.5"         No         12 x 2TB 3.5" SAS         No         2 x 1m         2 x 550W           D003UX         2         12 x 3.5"         No         12 x 4TB 3.5" SAS         No         2 x 1m         2 x 550W           D000UX         1         12 x 3.5"         No         Open         No         1 x 1m         1 x 550W           D001UX         2         12 x 3.5"         No         Open         No         2 x 1m         2 x 550W           D006UX         2         12 x 3.5"         No         12 x 2TB 3.5" SAS         No         2 x 1m         2 x 550W	D002UX         2         12 x 3.5"         No         12 x 2TB 3.5" SAS         No         2 x 1m         2 x 550W         Rail kit           D003UX         2         12 x 3.5"         No         12 x 4TB 3.5" SAS         No         2 x 1m         2 x 550W         Rail kit           D000UX         1         12 x 3.5"         No         Open         No         1 x 1m         1 x 550W         Rail kit           D001UX         2         12 x 3.5"         No         Open         No         2 x 1m         2 x 550W         Rail kit           D006UX         2         12 x 3.5"         No         12 x 2TB 3.5" SAS         No         2 x 1m         2 x 550W         Rail kit	D002UX         2         12 x 3.5"         No         12 x 2TB 3.5" SAS         No         2 x 1m         2 x 550W         Rail kit         3           D003UX         2         12 x 3.5"         No         12 x 4TB 3.5" SAS         No         2 x 1m         2 x 550W         Rail kit         3           D000UX         1         12 x 3.5"         No         Open         No         1 x 1m         1 x 550W         Rail kit         3           D001UX         2         12 x 3.5"         No         Open         No         2 x 1m         2 x 550W         Rail kit         3           D006UX         2         12 x 3.5"         No         12 x 2TB 3.5" SAS         No         2 x 1m         2 x 550W         Rail kit         3

70E0: Polationship models

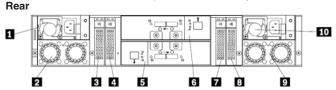
/UFU: Helationsnip models	/UF1:TopSeller models								
Connection mode Compatible host server and RAID controllers/Host	Connects directly to host server, up to 4 enclosures per port (cascading mode) Supports the following RAID controller or Host Bus adapters on compatible host servers, RAID levels are supported by RAID controller on host server:								
Bus adapters	RAID/HBA adapters	PN	TD340 RD340 RD440 RD540 RD640	RD330 RD430 RD530 RD630					
	LSI 9280-8e 6Gb SAS RAID HBA by LSI (0/1/10/5/50/6/60)	4XB0F28645	Yes	Yes					
	LSI 9286CV-8e 6Gb SAS RAID HBA by LSI (0/1/10/5/50/6/60)	4XB0F28646	Yes						
I/O Module	Supports 1 or 2 ThinkServer Storage Array 60 redundant with two I/O modules	Sbps I/O Modul	es,						
Front 3.5" Disk Bays	Front 3.5" Disk Bays 12 x 3.5" SAS hard drive bays, hot-swap, supports 1TB/2TB/3TB/4TB 3.5" SAS 6.0Gb/s 7200 rpm hard drives								
D 0.5" D: 1 D									

I/O Module	redundant with two I/O modules
Front 3.5" Disk Bays	12 x 3.5" SAS hard drive bays, hot-swap, supports 1TB/2TB/3TB/4TB 3.5" SAS 6.0Gb/s 7200 rpm hard drives
Rear 2.5" Disk Bays (optional)	Optional 4 x 2.5" SATA SSD hot-swap disk drive bays. Requires optional ThinkServer 2.5" SATA SSD Cage with SATA Interposers (4XF0F28766, includes two SSD cages for 4 bays)
Maximum storage per enclosure	Front 3.5" Disk Bays: up to 48TB (using 12 x 4TB 3.5" SAS hard drives) Optional rear 2.5" Disk Bays: up to 3.2TB (using 4 x 800GB 2.5" SSD drives)
External minSAS Cable (option)	Optional 0.5m/1.0m/2.0m/4.0m/6.0m SFF8088 to SFF8088 26-pin Mini-SAS cables
Fan module	Two fan modules standard, hot-swap, redundant, two fans per fan module
Power supply	One or two 550 watts standard, two maximum, rear access, hot-swap, 80 PLUS Gold qualified, redundant with two power supplies
Rail kit	Includes static rail kit for rack mount
Systems Management	<ul> <li>SCSI Enclosure Services (SES) command set</li> <li>Enclosure management via IOCC controller</li> <li>Includes one RS232 to RJ11 cable for remote debug and firmware upgrade</li> </ul>
Mechanical	<ul> <li>2U rack, static rail kit included</li> <li>19"W x 15.51"D x 3.4"H (with rack handles)</li> <li>482.6mm W x 394.05mm D x 86.6mm H (with rack handles)</li> <li>22 kg (48.5 lb) when fully configured</li> </ul>
Environment	• Air temperature: Operating: Storage: • Alitiude:  Operating: 10°C to 35°C (50°F to 95°F) -40°C to 70°C (-40°F to 158°F) in original package 0-10000ft (0-3048m), unpressurized

Operating: 8% to 80% (non-condensing)
Storage without package: 8% to 80% (non-condensing)
Storage with package: 8% to 90% (non-condensing)



12 x 3.5" hot-swap SAS disk drive bays



Power Supply 1 Fan modules 2/9 3/4/7/8 Rear 4 x 2.5" SATA SSD drive bays (optional)

I/O module 1 6 I/O module 2 (optional) Power Supply 2 (optional) 10

### Rear Ports (per I/O module)

- 1 SAS (SFF8088) IN connector for connection to host server 1 SAS (SFF8088) OUT connector for connection to another enclosure 1 RJ-11 port for remote debug and firmware upgrade

### **Core Options**

3.5" 1TB 7.2K SAS 6Gbps Hot Swap Hard Drive	0C19530
3.5" 2TB 7.2K SAS 6Gbps Hot Swap Hard Drive	0C19531
3.5" 3TB 7.2K SAS 6Gbps Hot Swap Hard Drive	0C19532
3.5" 4TB 7.2K SAS 6Gbps Hot Swap Hard Drive	4XB0F28635
3.5" 6TB 7.2K SAS 12Gbps Hot Swap Hard Drive	4XB0F28683
2.5" 100GB Mainstream Multipurpose SATA 6Gbps Hot Swap SSD	4XB0F28636
2.5" 200GB Mainstream Multipurpose SATA 6Gbps Hot Swap SSD	4XB0F28637
2.5" 400GB Mainstream Multipurpose SATA 6Gbps Hot Swap SSD	4XB0F28638
2.5" 800GB Mainstream Multipurpose SATA 6Gbps Hot Swap SSD	4XB0F28639
2.5" 120GB Value Read-Optimized SATA 6Gbps Hot Swap SSD	4XB0F28615
2.5" 240GB Value Read-Optimized SATA 6Gbps Hot Swap SSD	4XB0F28616
2.5" 300GB Value Read-Optimized SATA 6Gbps Hot Swap SSD	4XB0F28640
2.5" 480GB Value Read-Optimized SATA 6Gbps Hot Swap SSD	4XB0F28617
2.5" 800GB Value Read-Optimized SATA 6Gbps Hot Swap SSD	4XB0F28641
550W Gold Hot Swap Redundant Power Supply	4X20E54689
ThinkServer Storage Array 6Gbps IO Module	4XF0F28765
ThinkServer 2.5" SATA SSD Cage with SATA Interposers	4XF0F28766
(includes two SSD cages for 4 bays)	
0.5 meters 26 Pin (SFF-8088 to SFF-8088) External mini-SAS cable	4X90F31494
1 meter 26 Pin (SFF-8088 to SFF-8088) External mini-SAS cable	4X90F31495
2 meters 26 Pin (SFF-8088 to SFF-8088) External mini-SAS cable	4X90F31496
4 meters 26 Pin (SFF-8088 to SFF-8088) External mini-SAS cable	4X90F31497
6 meters 26 Pin (SFF-8088 to SFF-8088) External mini-SAS cable	4X90F31498

Humidity:

## **Withdrawn Product Books**

Product Specifications Reference (PSREF)

### Disclaimer

Lenovo provides the information in the Product Specifications Reference (PSREF) withdrawn product books on an "AS-IS" basis. Because the actual products have been withdrawn from marketing, the information in these withdrawn product books is no longer maintained or updated. The referenced footnote numbering may not correspond with the listed footnotes.

PSREF books for the withdrawn systems: http://www.lenovo.com/psref/psrefs\_withdrawn.html **Availability:** All offers subject to availability. Lenovo reserves the right to alter product offerings and specifications at any time, without notice. Lenovo is not responsible for photographic or typographic errors.

**Warranty:** For a copy of applicable product warranties, write to: Warranty Support Dept., EMEA Services, Lenovo, Eisteinova 21, 851 01 Bratislava, Slovakia. Lenovo makes no representation or warranty regarding third party products or services.

- Limited warranty: Support unrelated to a warranty issue may be subject to additional charges.
- <sup>2</sup> **Hard drive:** GB = billion bytes, TB = trillion bytes. Accessible capacity is less.
- 3 Systems with limited onsite service are designed to be repaired during the applicable warranty period primarily with customer-replaceable parts provided by Lenovo. Lenovo will only send a technician onsite to perform a repair if (a) remote telephone diagnosis and/or customer part replacement are unable to resolve the problem, or (b) the part is one of the few designated by Lenovo for onsite replacement. For a list of onsite replaceable parts, contact Lenovo. Support unrelated to a warranty issue may be subject to additional charges. Support phone list available at www-307.ibm.com/pc/support/site.wss/ document.do?Indocid=MIGR-70552
- SATA/SAS: The system configuration supports the installation of either SATA or SAS disks. A configuration including both SATA and SAS disks is not supported.
- Lenovo Services: These services are available for machines normally used for business, professional, or trade purposes, rather than personal, family, or household purposes. Not all machine types and models are covered. Service period begins with the equipment date of purchase. Service must be purchased during the original limited product warranty period. Service levels are response time objectives and are not guarantees. If the machine problem turns out to be a Customer Replaceable Unit (CRU), a part will be express shipped to you for quick replacement. See Lenovo Warranty Services terms and conditions for complete details and restrictions.

8 RAID: Supported RAID levels for a system will vary from the stated capabilities of the RAID controller due to dependencies on the number and capacity of physical disks in the system and on customer requirements for performance, fault tolerance, or data redundancy.

RAID levels and requirements:

- RAID 0 (striping) provides increased performance by writing data across multiple drives.
- RAID 1 (mirroring) provides fault tolerance by writing the data on two drives.
- RAID 5 (striping with parity) uses distributed parity data to provide fault tolerance more efficiently than RAID 1. Requires three or more drives.
- RAID 6 (striped set with dual distributed parity) provides fault tolerance from two drive failures; array continues to operate with up to two failed drives. Requires four drives.
- RAID 10 (or RAID 1+0) combines
   RAID 1 and RAID 0 to create a stripe of mirrors that is fault tolerant while offering increased performance.

   Requires four drives.
- RAID 50 (or RAID 5+0) combines
   RAID 5 and RAID 0 to create block-level striping with distributed parity
   improving performance over RAID 5.

   Requires six drives.
- RAID 60 (or RAID 6+0) combines
   RAID 6 and RAID 0 to create block-level striping with distributed double
   parity improving performance over
   RAID 6. Requires eight drives.
- <sup>14</sup> Response times may vary. Response time is an average target and comitted service level. May exclude some holidays. Telephone support may be subject to additional charges.



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